TUV Telecom Services, Inc.

1775 Old Highway 8 NW Suite 107
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Fax. +1 (651) 639-0873

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TEST REPORT NO.

TS014/081601/99

Date: August 26, 1999

Total Number of Pages: 82

Equipment: **PM4351 Comet**

Client: **PMC-Sierra**
Address: **105-8555 Baxter Place**
Burnaby, B.C. V5A 4V7
Canada

ACA Technical Standard: **TS-014 (1997)**

Authorised Signature:

August 26, 1999	**David A. Freemore**	**Lead Engineer**	
Date	Name	Title	Signature

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1 IDENTIFICATION SUMMARY

1.1 Test Laboratory

TUV Telecom Services, Inc.
1775 Old Highway 8, Suite 107
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Accredited by the National Voluntary Laboratory Accreditation Program for the specific scope of accreditation under Lab Code 200039-0.

This laboratory has been determined under the Australian Telecommunications Act 1997 as a Recognised Testing Authority for the tests reported herein. This determination has been made on the basis of accreditation by UKAS and the Mutual Recognition Agreement between UKAS and the National Association of Testing Authorities, Australia.

1.2 Limits and Reservations

This test report satisfies European Standard EN 45001 (1989), AUSTEL TAG 5 (1994), ISO Guide 25 and NIST Handbook 150. The test results in this test report apply only to the particular System under Test (SUT) and component Implementations under Test (IUTs) declared in this test report.

This report must not be used by the client to claim product endorsement by NVLAP or any agency of the US Government.

1.3 Client Information

Name	: **PMC-Sierra**
Street	: **105-8555 Baxter Place**
City	: **Burnaby, B.C. V5A 4V7**
Country	: **Canada**
Phone	: **+1 (604) 415-6000**
Fax	: **+1 (604) 415-6206**
Contact Person	: **Fayaz Khaki**
Phone	: **+1 (604) 415-6000**
Fax	: **+1 (604) 415-6206**

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1.4 Product

Supplier's name : **PMC-Sierra**
Street : **105-8555 Baxter Place**
City : **Burnaby, B.C. V5A 4V7**
Country : **Canada**
Phone : **+1 (604) 415-6000**
Fax : **+1 (604) 415-6206**

1.4.1 IUT Identification

Name	**PM4351 Comet**
Version/Model	**Comet Reference Design Board Rev. 2**
Serial No.	**83110-2-0001**
Interface board	--
Chip set	**PM4351 Comet Rev. F**
Transformer	**Midcom 50436**
Connector types	**Bantam**
Interfaces	**2 at E1**
Software and Version	--

1.4.2 System under Test (SUT)

(If applicable)

SUT Configuration for testing (PC, Bus System, Clock etc.)	**Motherboard used for microprocessor interface**
Operating System	--
Version No.	--
Miscellaneous	--

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1.4.3 Type of Product

Monolithic device which integrates software selectable full featured T1 and E1 framers and T1 and E1 shorthand and longhand line interfaces

1.5 Nature of Conformance Testing

The purpose of Conformance Testing is to increase the probability that different implementations can interwork. However, the complexity of OSI protocols makes exhaustive testing impractical on both technical and economic grounds. Furthermore, there is no guarantee that an IUT which has passed all the relevant tests conforms to a specification. Neither is there any guarantee that such an IUT will interwork with other real open systems. Rather, the passing of the tests gives confidence that the IUT has the stated capabilities and that its behaviour conforms consistently in representative instances of communication.

2 Test Conditions

2.1 Environmental Conditions

Temperature	: In the range of 15°C to 25°C	**(√)** Yes	( )No
Relative humidity	: In the range of 45% to 75%	**(√)** Yes	( )No

2.2 Power Supply Limitations

All tests were carried out within +/- 5% of the normal operating voltage of 5.0 VDC.

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3 System Report Summary

3.1 Test Report Summary Layer 1

Protocol Standard: *TS 014 (1997)*

Protocol Conformance Test Report: *See Section 6.1*

Abstract Test Suite (ATS) Standard: *TS 014 (1997)*

Abstract Test Method: *Remote Single Layer Embedded (RSE)*

Real Test system:

Executable Test Suite (ETS) Identification:

Name : CTS Layer 1 Conformance Tests
Version : A.09.10

Test system Identification:

ISDN-S_{2M}-Test System IPATS:

Manufacturer : Hewlett Packard / Admit Design Systems

Conformance Status:

Static Conformance Errors : **No**
Dynamic Conformance Errors : **No**

Test cases run: 34

Passed : 34
Failed : 0

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4 Observations

Date: **August 16, 1999**

Note 1: This state is optional
Note 2: Timer T304 is optional.
Note 3: The ALERT message is sent but state U7 in only transitory

5 Summary of Compliance

Date: **August 16, 1999**

The test results in this test report apply only to the particular System under Test (SUT) and component Implementations under Test (IUTs) declared in this test report.

5.1 Statement of Compliance

The SUT referred to in this test report was found to comply with the requirements of:
ACA TS-014 (1997) Layers 1,2,3.

Exclusions: *Par. 5.5 (Optional)*

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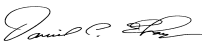
6 Protocol Conformance Test Report

6.1 Protocol Conformance Test Report Layer 1

6.1.1 Dates

Receipt of SUT/IUT: **August 16, 1999**
Date of Test: **August 16, 1999**

6.1.2 Operator

Dan Thayer 
(Signature)

6.1.3 Test System

Name : CTS Layer 1 Conformance Tests
Version : A.09.10

Test system Identification:

ISDN-S_{2M}-Test System IPATS:

Manufacturer : Hewlett Packard / Admit Design Systems

6.1.4 Test Environment

Temperature	: In the range of 15°C to 25°C	**(√)** Yes	( )No
Relative humidity	: In the range of 45% to 75%	**(√)** Yes	( )No

All tests are carried out within +/- 5% of the normal operating voltage of 5.0 VDC.

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6.1.5 Test Campaign Report

The tables in this section indicate for each test both the test case selection that was performed by the test laboratory and the results of testing. The tables are set up as followed below. Notes on the information that the test laboratory shall complete in the columns are profited below, and referenced as *n)*.

Test Case	Description	Verdict	Comment
a)	b)	c)	d)

a) Reference to the abstract test case of the ATS standard.

b) Brief description of the test case.

c) Indicates the verdicts as assigned during the test campaign.

Possible verdicts:

Complies (C):	The test purpose according to the ATS is achieved, test did run as defined in ETS to completion.
Does not comply (NC):	The test purpose according to the ATS is not achieved, test did not run as defined in ETS to completion.
Not tested (NT):	Test case was not tested.
Not applicable (NA):	Test case was not applicable for the SUT configuration considering the possible options.
Noted (N):	Clause/subclause/requirement/test case was not checked but noted.

d) Indicates a reference to any observations made in section 4 of this test report.

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6.1.6 Test Results

TS 014	Description	Verdict	Comment
5 Requirements			
5.1	General		
5.1.1	Safety	N	
5.1.2	Fail-Safe Operation	C	
5.1.3	Emergency Calling	N	
5.1.4	Operating Voltage and Environmental Conditions	N	
5.1.5	Line Polarity and Line Conductor Polarization	C	
5.1.6	Emission of Electromagnetic Interference	N	
5.1.7	Voice Frequency Performance	NA	
5.2	Layer 1		
5.2.1	General	N	
5.2.2	Configuration	C	
5.2.3	Interfaces	C	
5.2.4	Pair Connections	C	
5.2.5	Line Connections	C	
5.2.6	Powering	C	
5.2.7	Timing Functions	C	
5.2.8	Bit Rate	C	
5.2.9	Line Coding	C	
5.2.10	Frame Structure		
5.2.10.1	Number of bits per time slot	C	
5.2.10.2	Number of time slots per frame	C	
5.2.10.3	Time Slot Assignment	C	
5.2.10.3.1	Frame Alignment Signal	C	
5.2.10.3.2	D - Channel	C	
5.2.10.3.3	B- Channels	C	
5.2.10.4	Frame Alignment Procedures	C	
5.2.11	Output Signal Characteristics		
5.2.11.1	Puls Shape	C	
5.2.11.2	Impedance	C	
5.2.12	Input Signal Characteristics		
5.2.12.1	Puls Shape	NA	
5.2.12.2	Return Loss and Signal/Noise Immunity	C	
5.2.12.3	Jitter and Wander	C	
5.2.13	Operation and Maintenance		
5.2.13.1	Alarm Indication Signal	C	
5.2.13.2	CRC Procedure	C	
5.2.13.3	CRC Multiframe Alignment Procedure	C	
5.2.13.4	CRC Bit Monitoring	C	

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TS 014	Description	Verdict	Comment
5.2.14	Alarm Bits		
5.2.14.1	CE to Network Alarm Bits	C	
5.2.14.2	Network to CE Alarm Bits	NA	
5.2.15	National Information Bits	C	
5.2.16	Idle Codes	C	
5.2.16.1	Idle Time Slots	C	
5.2.16.2	D - Channel Interframe Timefill	C	
5.3	Data Link Layer - Layer 2	N	
5.4	Layer 3	N	

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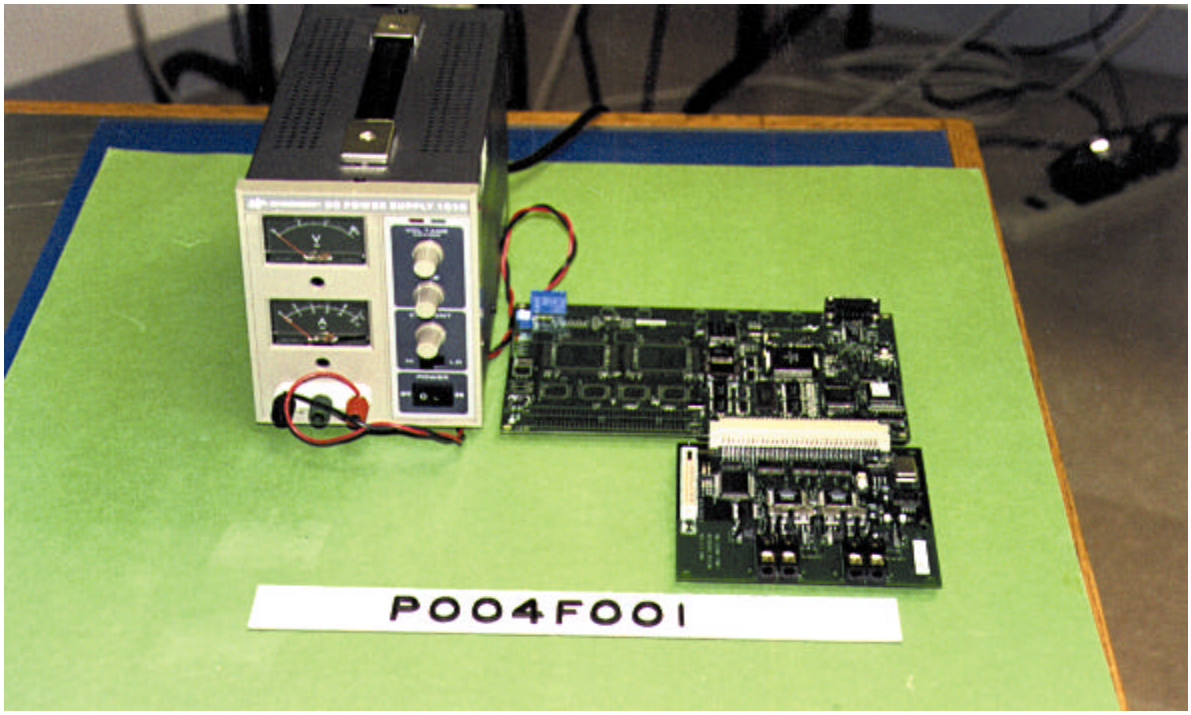
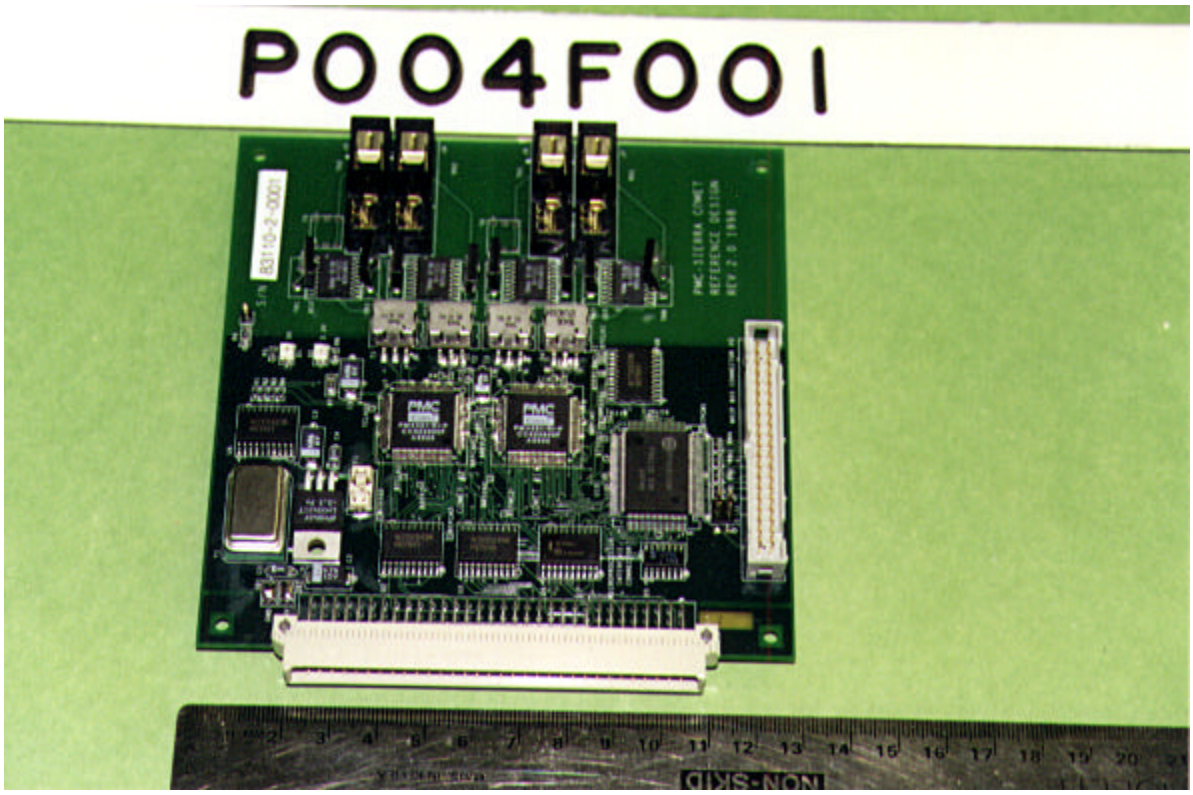
Appendix A - Photographs





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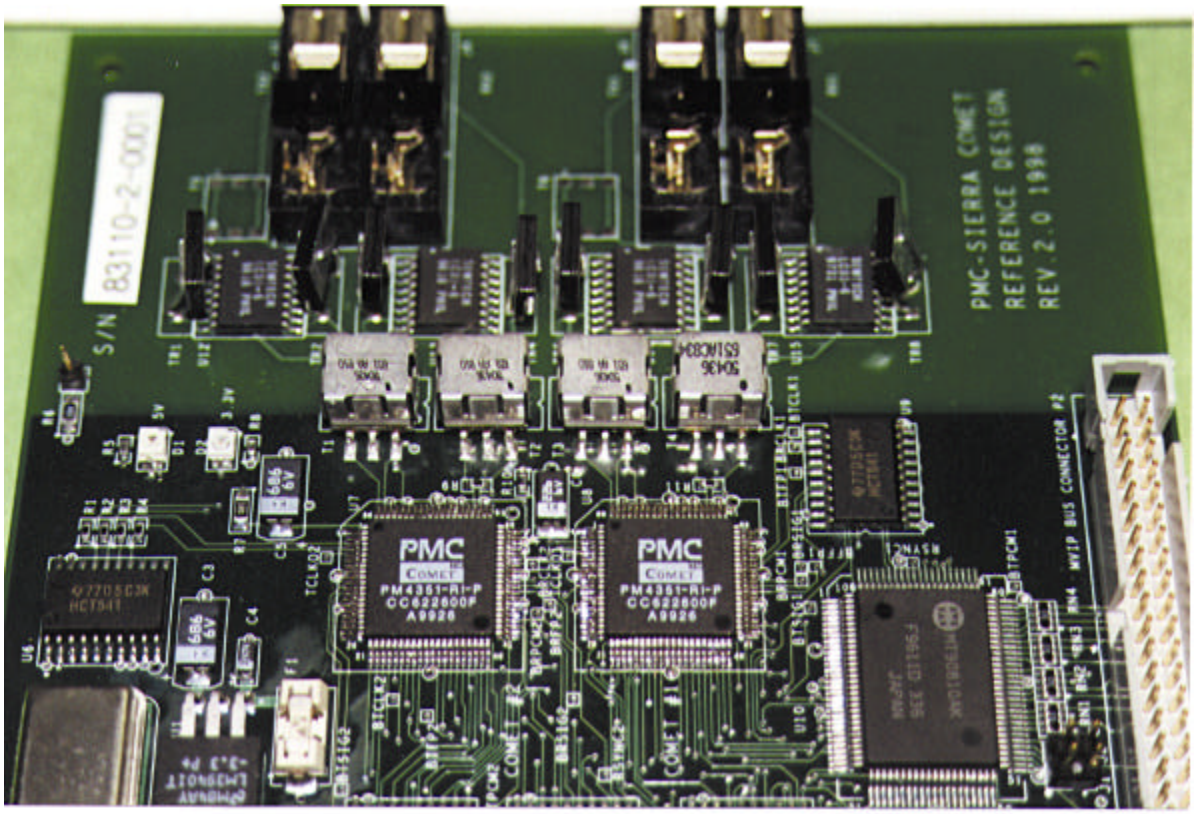

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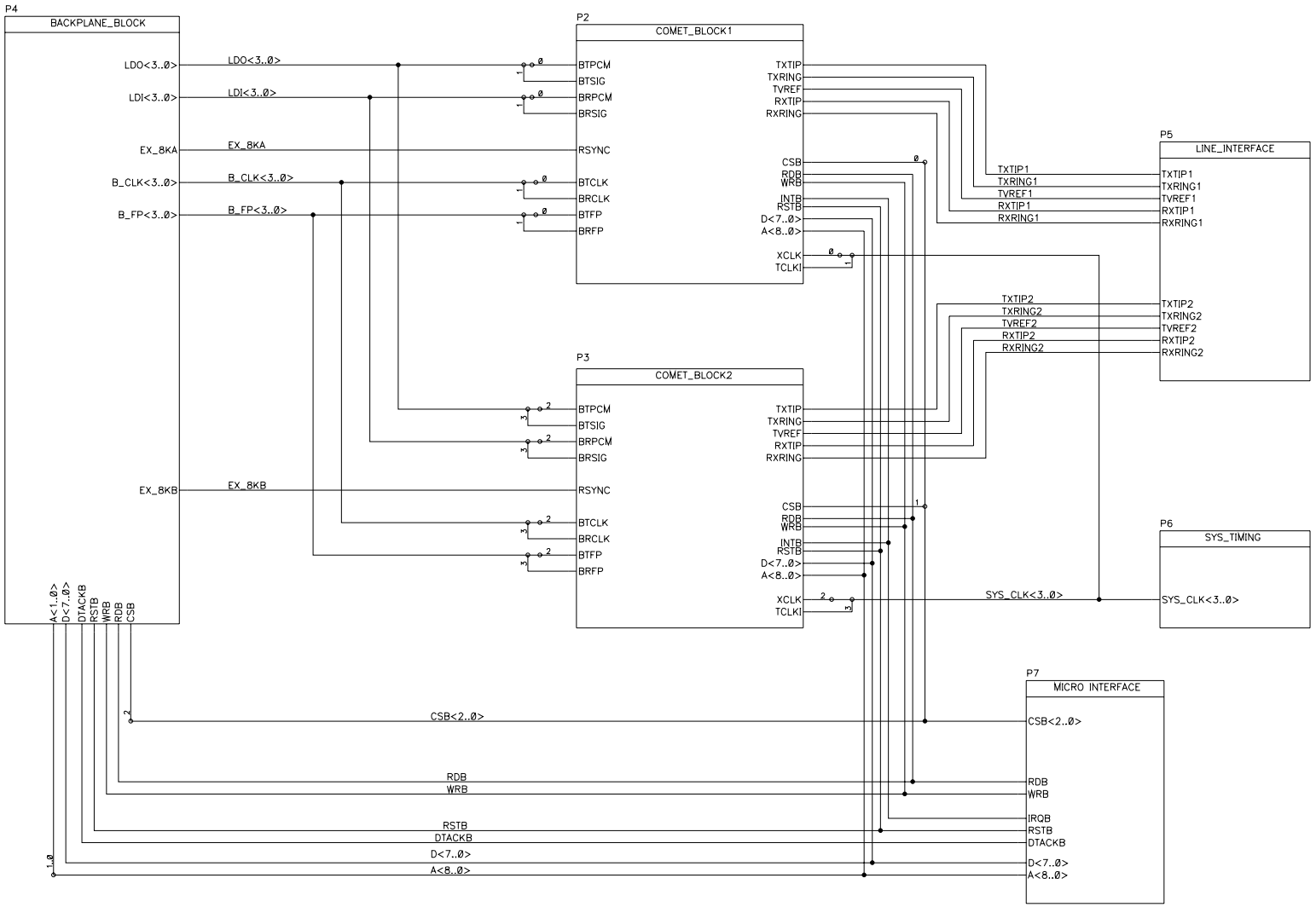
Appendix B - Circuit Diagrams

See attached circuit diagrams

Document Number: PMC-980223
Page 1 of 7-7 of 7

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPR



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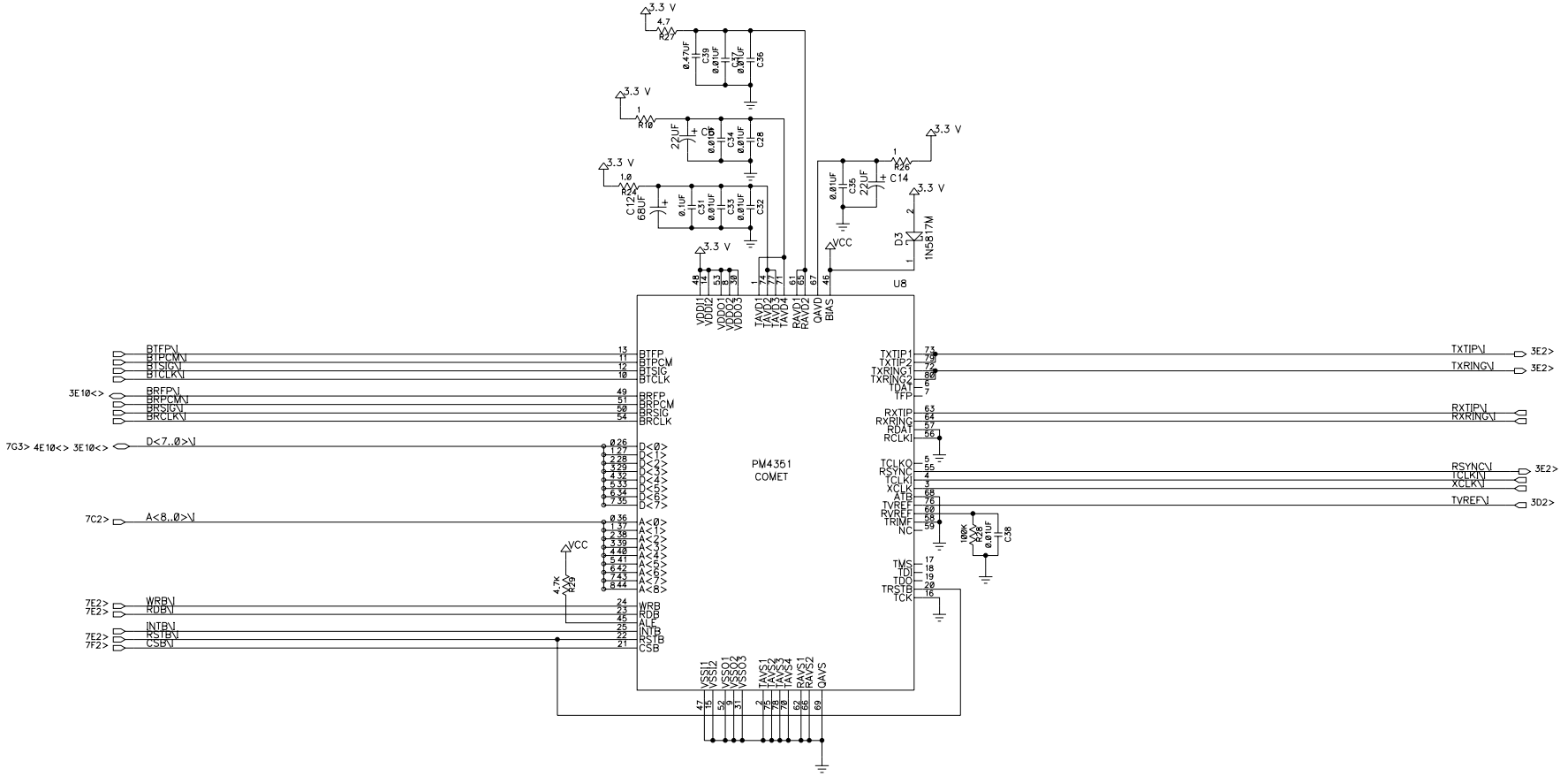
ABBREV=COMET_ROOT
LAST_MODIFIED=Fri Sep 11 15:57:37 1998

PMC-Sierra, Inc.

DOCUMENT NUMBER: PMC-980223	ISSUE: 2.0
TITLE: COMET REFERENCE DESIGN ROOT DRAWING	DATE: MAR. 6, 98
ENGINEER: FK	PAGE: 1 OF 7

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPR



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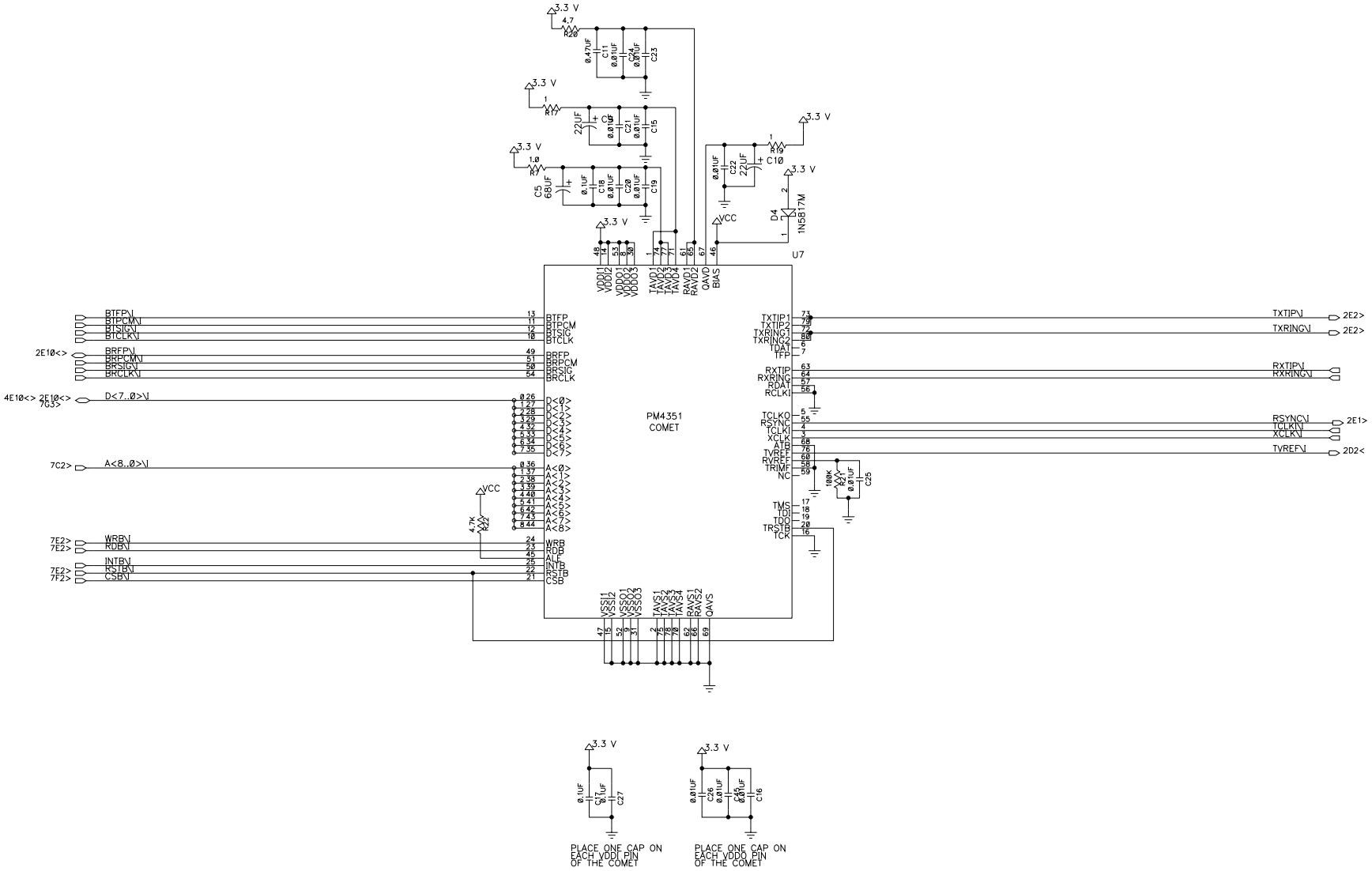
PMC-Sierra, Inc.

DOCUMENT NUMBER: PMC-980223	ISSUE: 2.0
TITLE: COMET REFERENCE DESIGN COMET BLOCK 1	DATE: MAR. 6, 98
ENGINEER: FK	PAGE: 2 OF 7

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPR



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PMC-Sierra, Inc.

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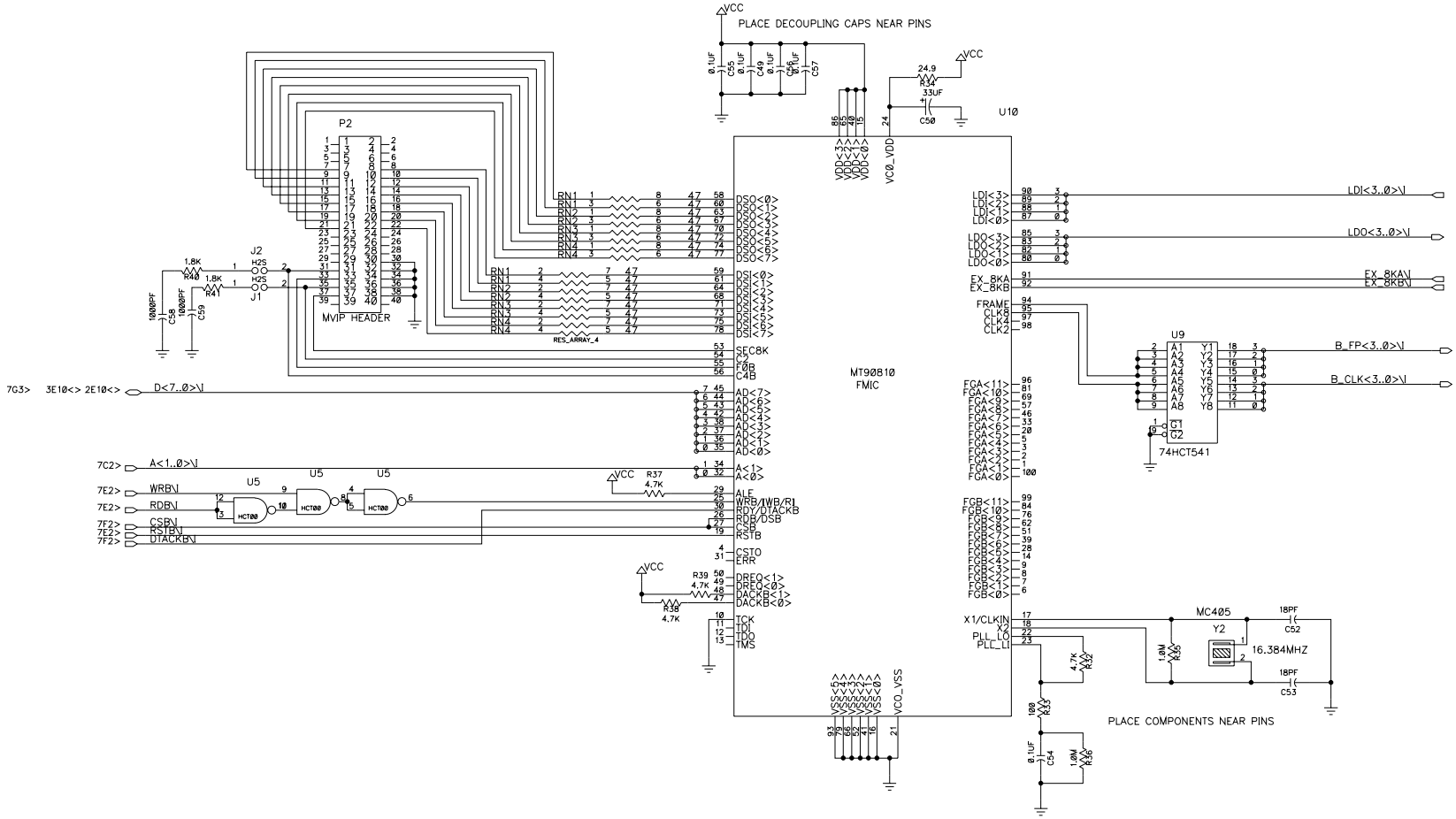
ENGINEER: EDWARD CHEN	PAGE: 3 OF 7

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPR



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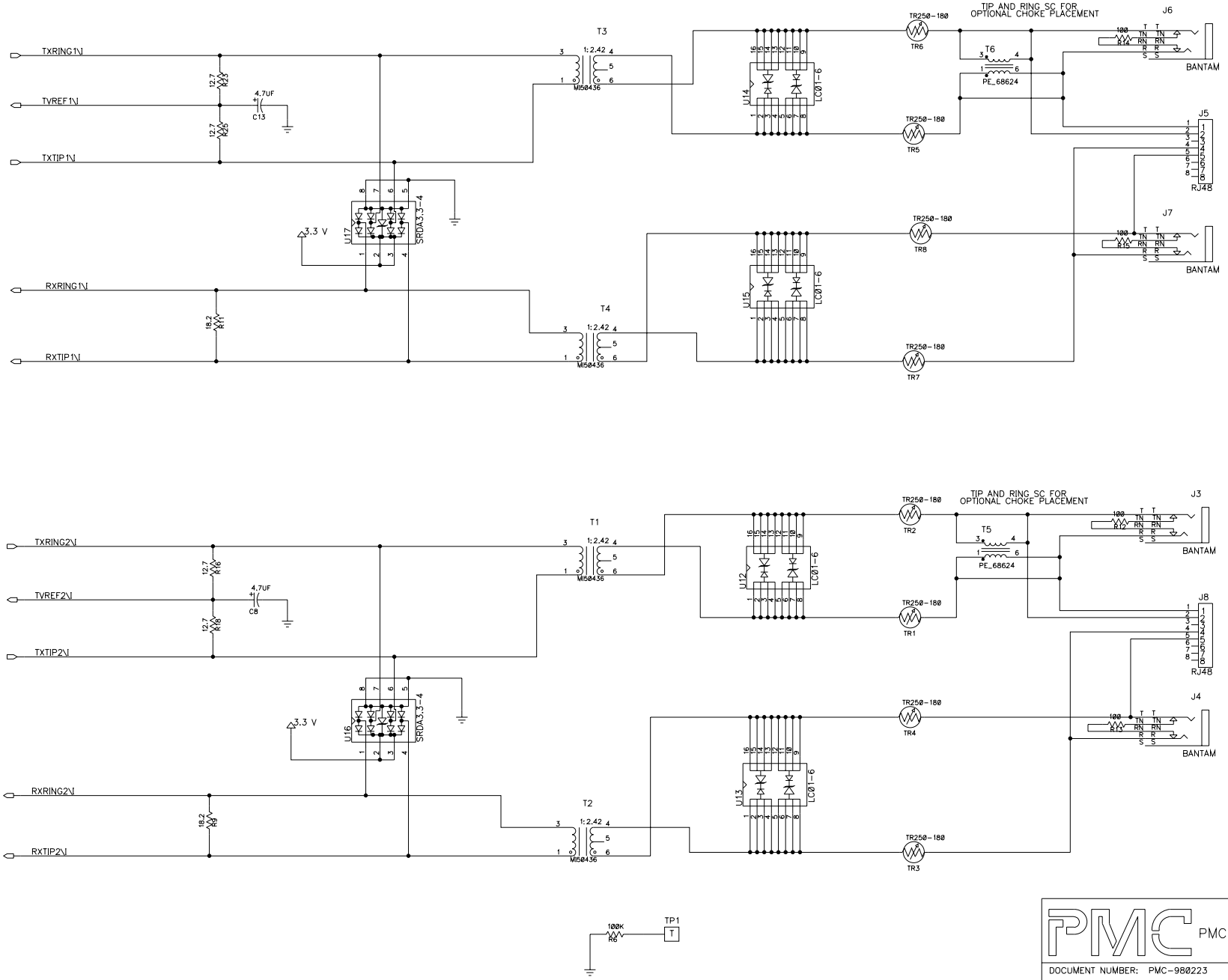
PMC-Sierra, Inc.

DOCUMENT NUMBER: PMC-980223	ISSUE: 2.0
TITLE: COMET REFERENCE DESIGN BACKPLANE BLOCK	DATE: MAR. 6, 98
ENGINEER: FK	PAGE: 4 OF 7

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPR



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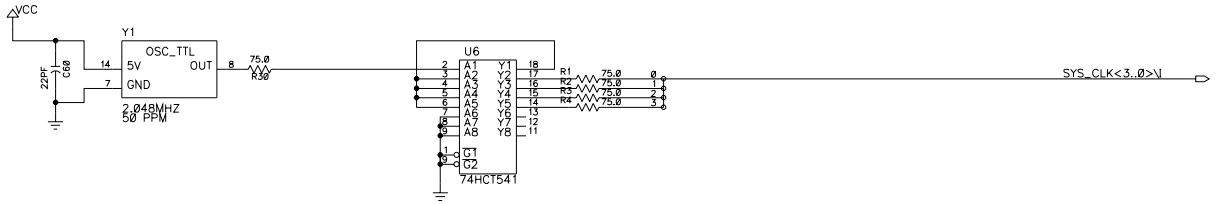
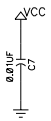
PMC-Sierra, Inc.

DOCUMENT NUMBER: PMC-980223	ISSUE: 2.0
TITLE: COMET REFERENCE DESIGN LINE INTERFACE	DATE: MAR. 6, 98
ENGINEER: FK	PAGE: 5 OF 7

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPR



PLACE CAPACITORS CLOSE TO PINS



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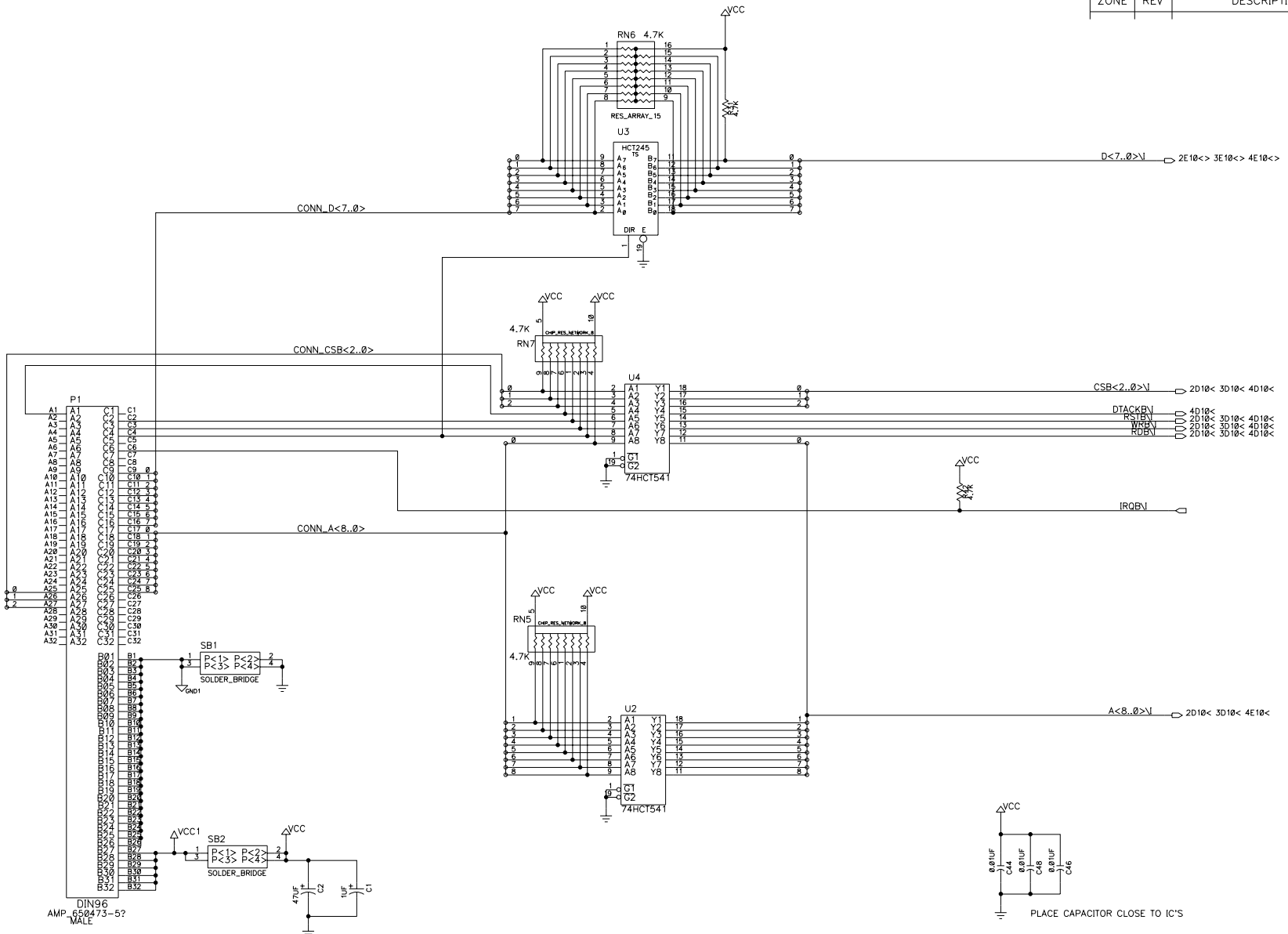
PMC-Sierra, Inc.

DOCUMENT NUMBER: PMC-980223	ISSUE: 2.0
TITLE: COMET REFERENCE DESIGN SYS TIMING	DATE: MAR. 6, 98
ENGINEER: FK	PAGE: 6 OF 7

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPR



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PMC-Sierra, Inc.

DOCUMENT NUMBER: PMC-980223	ISSUE: 2.0
TITLE: COMET REFERENCE DESIGN MICRO_INTERFACE	DATE: MAR. 6, 98
ENGINEER: FK	PAGE: 7 OF 7

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Appendix C - Test Data

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I.U.T. : PM4351 COMET PMC-Sierra Inc

Test Sequence created on : 16/Aug/1999 12:21:10

Data was stored into : ./TE/AUS14_120/dir1

S C S SUMMARY

Client : PMC-Sierra Inc.

Contact person : Fayaz Khaki Telephone : (604) 415-6000

Terminal Equipment : Reference Design Board

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I.U.T. : PM4351 COMET PMC-Sierra Inc

Test Sequence created on : 16/Aug/1999 12:21:10

Data was stored into : ./TE/AUS14_120/dir1

SYSTEM CONFORMANCE STATEMENT (SCS) AND CLIENT CHECKLIST

EQUIPMENT

EQUIPMENT IDENTIFICATION

Type	: PM4351 COMET		
Name	: .	Model	: .
Version	: F	Serial No.	: 83110-2-0001

SUPPLIER

Company Name	: .	Telephone	: .
Street No.	: .	Telefax	: .
City	: .	Telex	: .
Country	: .	Teletex	: .

MANUFACTURER

Company Name	: PMC-Sierra Inc.	Telephone	: (604) 415-6000
Street No.	: 105 -8555 Baxter Place	Telefax	: (604) 415-6206
City	: Burnaby, BC V5A 4V7	Telex	: .
Country	: Canada	Teletex	: .

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I.U.T. : PM4351 COMET PMC-Sierra Inc

Test Sequence created on : 16/Aug/1999 12:21:10

Data was stored into : ./TE/AUS14_120/dir1

PHYSICAL LAYER PICS

OPTIONAL CAPABILITIES

TE/NT2 has only one user-network interface : YES

TE/NT2 has more than one user-network interface : NO

PTNX INTERCONNECTIONS

Does the IUT act as a master : NO

Does the IUT act as a slave : YES

MULTI ACCESSES IUT TIMING METHOD

Only one input used at a point in time to extract synchronization : YES

More than one input used at a point in time to extract synchronization : NO

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I.U.T. : PM4351 COMET PMC-Sierra Inc

Test Sequence created on : 16/Aug/1999 12:21:10

Data was stored into : ./TE/AUS14_120/dir1

PHYSICAL LAYER PIXIT

Does the TE support PTNX interconnection	: NO
Is the TE user/network interface at the S ref. point	: YES
Does the TE transmit a PRBS 2^11-1 in a time slot	: NO
How many accesses has the TE	: 1
Which of the accesses has the synchronization	: 1
Clock synchronization time sec [FULL RANGE]	: 10
Internal clock frequency accuracy better than 1ppm ?	: NO

Client's additional informations : Order No.:P004F001 TS014

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```
Data retrieved from : ./TE/AUS14_120/dir12/C28

I.U.T.    PM4351 COMET      PMC-Sierra Inc
Test  :       5.2.8  Bit Rate & Tolerance
Test Sequence created on : 16/Aug/1999 15:30:07
TEST RESULT : PASSED
|-----------------------------------------------------|
|  Measured bit rate   |  deviation    |    Limits    |
|        [ Hz ]        |   [ ppm ]     |   [ ppm ]    |
|----------------------|---------------|--------------|
|                      |               |              |
|     2048062.507      |     +30.52    | +/-  50      |
|                      |               |              |
|----------------------|---------------|--------------|
@
```

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Data retrieved from : ./TE/AUS14_120/dir6/C29

I.U.T. PM4351 COMET PMC-Sierra Inc
Test : HDB3 5.2.9 Line Coding (payload loopback req)
Test Sequence created on : 16/Aug/1999 14:19:56
TEST RESULT : PASSED

Network Em. Freq. CLOCK [Hz]	I.U.T. rec. Freq. CLOCK [Hz]	ALARMS SGL	ALARMS AIS	ALARMS RAI	ALARMS FML	ALARMS CRC	ERRORS count CODE	ERRORS count FRAME	ERRORS count CRC	ERRORS count Ebit	I.U.T sync
2048000.000	2048000.000	no	no	no	no	no	0	0	0	0	YES

I.U.T. PM4351 COMET PMC-Sierra Inc
Test : AMI 5.2.9 Line Coding (payload loopback req)
Test Sequence created on : 16/Aug/1999 14:19:56
TEST RESULT : PASSED

Network Em. Freq. CLOCK [Hz]	I.U.T. rec. Freq. CLOCK [Hz]	ALARMS SGL	ALARMS AIS	ALARMS RAI	ALARMS FML	ALARMS CRC	ERRORS count CODE	ERRORS count FRAME	ERRORS count CRC	ERRORS count Ebit	I.U.T sync
2047999.999	2047999.999	no	no	no	YES	no	798908	0	0	0	YES

@

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```
Data retrieved from : ./TE/AUS14_120/dir6/C2104

I.U.T.   PM4351 COMET     PMC-Sierra Inc
Test 5.2.10.4  Frame alignment (without test of CRC procedure)step : 1
PRA/E1 SEQUENCE GENERATOR A.04.00
Copyright Hewlett-Packard Canada Ltd. 1992-95 & CSELT Italy 1994
READY
Test Sequence created on : 16/Aug/1999 14:19:56
Time start               : 16/Aug/1999 14:23:52
P.R.A.S.G. sequences :
A-1.1
LOOP
I.U.T.   SIGNAL ANALYSIS
TEST PERIOD             10  s
==================================
ALARM SECONDS
POWER  LOSS             0
SIGNAL LOSS             0
AIS                     0
CRC MULTI FRAME LOSS    0
REMOTE ALARM            0
====================================
ERRORS COUNT
CODE                    0
FRAME                   0
CRC                     0
E_bit                   0
====================================
ERROR FREE SECONDS
CODE                    10
FRAME                   10
CRC                     10
E_bit                   10
====================================
I.U.T. final STATUS ALARM
Normal Operational Frames
====================================
Time stop                : 16/Aug/1999 14:24:02
------------------------------------------------------------------------------------------------------------------------------
I.U.T.   PM4351 COMET     PMC-Sierra Inc
Test 5.2.10.4  Frame alignment (without test of CRC procedure)step : 2
PRA/E1 SEQUENCE GENERATOR A.04.00
Copyright Hewlett-Packard Canada Ltd. 1992-95 & CSELT Italy 1994
READY
Test Sequence created on : 16/Aug/1999 14:19:56
Time start               : 16/Aug/1999 14:24:07
P.R.A.S.G. sequences :
A-2.1
A-2.2
LOOP
I.U.T.   SIGNAL ANALYSIS
TEST PERIOD             10  s
==================================
ALARM SECONDS
POWER  LOSS             0
SIGNAL LOSS             0
AIS                     0
CRC MULTI FRAME LOSS    0
REMOTE ALARM            0
```

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```
====================================
ERRORS COUNT
CODE                    0
FRAME                   0
CRC                     0
E_bit                   0
====================================
ERROR FREE SECONDS
CODE                    10
FRAME                   10
CRC                     10
E_bit                   10
====================================
I.U.T. final STATUS ALARM
Normal Operational Frames
====================================
Time stop               : 16/Aug/1999 14:24:17
------------------------------------------------------------------------------------------------------------------------
I.U.T.   PM4351 COMET     PMC-Sierra Inc
Test 5.2.10.4  Frame alignment (without test of CRC procedure)step : 3
PRA/E1 SEQUENCE GENERATOR A.04.00
Copyright Hewlett-Packard Canada Ltd. 1992-95 & CSELT Italy 1994
READY
Test Sequence created on : 16/Aug/1999 14:19:56
Time start              : 16/Aug/1999 14:24:25
P.R.A.S.G. sequences :
A-3.1
A-3.2
LOOP
I.U.T.   SIGNAL ANALYSIS
TEST PERIOD             10  s
====================================
ALARM SECONDS
POWER  LOSS             0
SIGNAL LOSS             0
AIS                     0
CRC MULTI FRAME LOSS    0
REMOTE ALARM            0
====================================
ERRORS COUNT
CODE                    0
FRAME                   0
CRC                     0
E_bit                   0
====================================
ERROR FREE SECONDS
CODE                    10
FRAME                   10
CRC                     10
E_bit                   10
====================================
I.U.T. final STATUS ALARM
Normal Operational Frames
====================================
Time stop               : 16/Aug/1999 14:24:35
------------------------------------------------------------------------------------------------------------------------
I.U.T.   PM4351 COMET     PMC-Sierra Inc
Test 5.2.10.4  Frame alignment (without test of CRC procedure)step : 4
PRA/E1 SEQUENCE GENERATOR A.04.00
Copyright Hewlett-Packard Canada Ltd. 1992-95 & CSELT Italy 1994
```

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```
READY
Test Sequence created on : 16/Aug/1999 14:19:56
Time start               : 16/Aug/1999 14:24:42
P.R.A.S.G. sequences :
A-4.1
A-4.2
LOOP
I.U.T.   SIGNAL ANALYSIS
TEST PERIOD             10  s
====================================
ALARM SECONDS
POWER  LOSS             0
SIGNAL LOSS             0
AIS                     0
CRC MULTI FRAME LOSS    0
REMOTE ALARM            1
====================================
ERRORS COUNT
CODE                    0
FRAME                   0
CRC                     0
E_bit                   0
====================================
ERROR FREE SECONDS
CODE                    10
FRAME                   10
CRC                     10
E_bit                   10
====================================
I.U.T. final STATUS ALARM
Normal Operational Frames
====================================
Time stop                : 16/Aug/1999 14:24:53
-------------------------------------------------------------------------------------------------------------------------------
I.U.T.   PM4351 COMET     PMC-Sierra Inc
Test 5.2.10.4  Frame alignment (without test of CRC procedure)step : 5
PRA/E1 SEQUENCE GENERATOR A.04.00
Copyright Hewlett-Packard Canada Ltd. 1992-95 & CSELT Italy 1994
READY
Test Sequence created on : 16/Aug/1999 14:19:56
Time start               : 16/Aug/1999 14:25:00
P.R.A.S.G. sequences :
A-5.1
A-5.2
LOOP
I.U.T.   SIGNAL ANALYSIS
TEST PERIOD             10  s
====================================
ALARM SECONDS
POWER  LOSS             0
SIGNAL LOSS             0
AIS                     0
CRC MULTI FRAME LOSS    0
REMOTE ALARM            10
====================================
ERRORS COUNT
CODE                    0
FRAME                   0
CRC                     0
E_bit                   0
```

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```
====================================
ERROR FREE SECONDS
CODE                    10
FRAME                   10
CRC                     10
E_bit                   10
====================================
I.U.T. final STATUS ALARM
REMOTE ALARM
====================================
Time stop               : 16/Aug/1999 14:25:10
------------------------------------------------------------------------------------------------------------------------
I.U.T.   PM4351 COMET     PMC-Sierra Inc
Test 5.2.10.4  Frame alignment (without test of CRC procedure)step : 6
PRA/E1 SEQUENCE GENERATOR A.04.00
Copyright Hewlett-Packard Canada Ltd. 1992-95 & CSELT Italy 1994
READY
Test Sequence created on : 16/Aug/1999 14:19:56
Time start              : 16/Aug/1999 14:25:17
P.R.A.S.G. sequences :
A-6.1
A-6.2
LOOP
I.U.T.   SIGNAL ANALYSIS
TEST PERIOD             10  s
====================================
ALARM SECONDS
POWER  LOSS             0
SIGNAL LOSS             0
AIS                     0
CRC MULTI FRAME LOSS    0
REMOTE ALARM            10
====================================
ERRORS COUNT
CODE                    0
FRAME                   0
CRC                     0
E_bit                   0
====================================
ERROR FREE SECONDS
CODE                    10
FRAME                   10
CRC                     10
E_bit                   10
====================================
I.U.T. final STATUS ALARM
REMOTE ALARM
====================================
Time stop               : 16/Aug/1999 14:25:28
------------------------------------------------------------------------------------------------------------------------
I.U.T.   PM4351 COMET     PMC-Sierra Inc
Test 5.2.10.4  Frame alignment (without test of CRC procedure)step : 7
PRA/E1 SEQUENCE GENERATOR A.04.00
Copyright Hewlett-Packard Canada Ltd. 1992-95 & CSELT Italy 1994
READY
Test Sequence created on : 16/Aug/1999 14:19:56
Time start              : 16/Aug/1999 14:25:35
P.R.A.S.G. sequences :
A-7.1
LOOP
```

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```
I.U.T.   SIGNAL ANALYSIS
TEST PERIOD             10  s
====================================
ALARM SECONDS
POWER  LOSS             0
SIGNAL LOSS             0
AIS                     0
CRC MULTI FRAME LOSS    0
REMOTE ALARM            1
====================================
ERRORS COUNT
CODE                    0
FRAME                   0
CRC                     0
E_bit                   0
====================================
ERROR FREE SECONDS
CODE                    10
FRAME                   10
CRC                     10
E_bit                   10
====================================
I.U.T. final STATUS ALARM
Normal Operational Frames
====================================
Time stop                : 16/Aug/1999 14:25:45
-------------------------------------------------------------------------------------------------------------------------------
I.U.T.   PM4351 COMET     PMC-Sierra Inc
Test 5.2.10.4  Frame alignment (without test of CRC procedure)step : 8
PRA/E1 SEQUENCE GENERATOR A.04.00
Copyright Hewlett-Packard Canada Ltd. 1992-95 & CSELT Italy 1994
READY
Test Sequence created on : 16/Aug/1999 14:19:56
Time start               : 16/Aug/1999 14:25:53
P.R.A.S.G. sequences :
A-8.1
LOOP
I.U.T.   SIGNAL ANALYSIS
TEST PERIOD             10  s
====================================
ALARM SECONDS
POWER  LOSS             0
SIGNAL LOSS             0
AIS                     0
*  CRC MULTI FRAME LOSS    0
REMOTE ALARM            0
====================================
ERRORS COUNT
CODE                    0
FRAME                   0
CRC                     0
E_bit                   0
====================================
ERROR FREE SECONDS
CODE                    10
FRAME                   10
CRC                     10
E_bit                   10
====================================
I.U.T. final STATUS ALARM
```

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```
Normal Operational Frames
=====================================
Time stop                : 16/Aug/1999 14:26:03
-------------------------------------------------------------------------------------------------------------------------------
I.U.T.   PM4351 COMET     PMC-Sierra Inc
Test 5.2.10.4  Frame alignment (without test of CRC procedure)step : 9
PRA/E1 SEQUENCE GENERATOR A.04.00
Copyright Hewlett-Packard Canada Ltd. 1992-95 & CSELT Italy 1994
READY
Test Sequence created on : 16/Aug/1999 14:19:56
Time start               : 16/Aug/1999 14:26:10
P.R.A.S.G. sequences :
A-9.1
LOOP
I.U.T.   SIGNAL ANALYSIS
TEST PERIOD             10  s
===================================
ALARM SECONDS
POWER  LOSS             0
SIGNAL LOSS             0
AIS                     0
CRC MULTI FRAME LOSS    0
REMOTE ALARM            0
====================================
ERRORS COUNT
CODE                    0
FRAME                   0
CRC                     0
E_bit                   0
====================================
ERROR FREE SECONDS
CODE                    10
FRAME                   10
CRC                     10
E_bit                   10
====================================
I.U.T. final STATUS ALARM
Normal Operational Frames
====================================
Time stop                : 16/Aug/1999 14:26:20
-------------------------------------------------------------------------------------------------------------------------------
I.U.T.   PM4351 COMET     PMC-Sierra Inc
Test 5.2.10.4  Frame alignment (without test of CRC procedure)step : 10
PRA/E1 SEQUENCE GENERATOR A.04.00
*  Copyright Hewlett-Packard Canada Ltd. 1992-95 & CSELT Italy 1994
READY
Test Sequence created on : 16/Aug/1999 14:19:56
Time start               : 16/Aug/1999 14:26:28
P.R.A.S.G. sequences :
A-10.1
LOOP
I.U.T.   SIGNAL ANALYSIS
TEST PERIOD             10  s
===================================
ALARM SECONDS
POWER  LOSS             0
SIGNAL LOSS             0
AIS                     0
CRC MULTI FRAME LOSS    0
REMOTE ALARM            10
```

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```
====================================
ERRORS COUNT
CODE                    0
FRAME                   0
CRC                     0
E_bit                   0
====================================
ERROR FREE SECONDS
CODE                    10
FRAME                   10
CRC                     10
E_bit                   10
====================================
I.U.T. final STATUS ALARM
REMOTE ALARM
====================================
Time stop               : 16/Aug/1999 14:26:38
-------------------------------------------------------------------------------------------------------------------------------
I.U.T.   PM4351 COMET     PMC-Sierra Inc
Test 5.2.10.4  Frame alignment (without test of CRC procedure)step : 11
PRA/E1 SEQUENCE GENERATOR A.04.00
Copyright Hewlett-Packard Canada Ltd. 1992-95 & CSELT Italy 1994
READY
Test Sequence created on : 16/Aug/1999 14:19:56
Time start              : 16/Aug/1999 14:26:45
P.R.A.S.G. sequences :
A-11.1
LOOP
I.U.T.   SIGNAL ANALYSIS
TEST PERIOD             10  s
==================================
ALARM SECONDS
POWER  LOSS             0
SIGNAL LOSS             0
AIS                     0
CRC MULTI FRAME LOSS    0
REMOTE ALARM            1
====================================
ERRORS COUNT
CODE                    0
FRAME                   0
CRC                     0
E_bit                   0
====================================
*  ERROR FREE SECONDS
CODE                    10
FRAME                   10
CRC                     10
E_bit                   10
====================================
I.U.T. final STATUS ALARM
Normal Operational Frames
====================================
Time stop               : 16/Aug/1999 14:26:56
-------------------------------------------------------------------------------------------------------------------------------
I.U.T.   PM4351 COMET     PMC-Sierra Inc
Test 5.2.10.4  Frame alignment (without test of CRC procedure)step : 12
PRA/E1 SEQUENCE GENERATOR A.04.00
Copyright Hewlett-Packard Canada Ltd. 1992-95 & CSELT Italy 1994
READY
```

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```
Test Sequence created on : 16/Aug/1999 14:19:56
Time start               : 16/Aug/1999 14:27:03
P.R.A.S.G. sequences :
A-12.1
A-12.2
LOOP
I.U.T.   SIGNAL ANALYSIS
TEST PERIOD              10  s
====================================
ALARM SECONDS
POWER  LOSS              0
SIGNAL LOSS              0
AIS                      0
CRC MULTI FRAME LOSS     0
REMOTE ALARM             0
====================================
ERRORS COUNT
CODE                     0
FRAME                    0
CRC                      0
E_bit                    0
====================================
ERROR FREE SECONDS
CODE                     10
FRAME                    10
CRC                      10
E_bit                    10
====================================
I.U.T. final STATUS ALARM
Normal Operational Frames
====================================
Time stop                : 16/Aug/1999 14:27:13
--------------------------------------------------------------------------------------------------------------------------------
I.U.T.   PM4351 COMET     PMC-Sierra Inc
Test 5.2.10.4  Frame alignment (without test of CRC procedure)step : 13
PRA/E1 SEQUENCE GENERATOR A.04.00
Copyright Hewlett-Packard Canada Ltd. 1992-95 & CSELT Italy 1994
READY
Test Sequence created on : 16/Aug/1999 14:19:56
Time start               : 16/Aug/1999 14:27:21
P.R.A.S.G. sequences :
A-13.1
A-13.2
END
*  I.U.T.   SIGNAL ANALYSIS
TEST PERIOD              10  s
====================================
ALARM SECONDS
POWER  LOSS              0
SIGNAL LOSS              0
AIS                      0
CRC MULTI FRAME LOSS     0
REMOTE ALARM             1
====================================
ERRORS COUNT
CODE                     0
FRAME                    0
CRC                      0
E_bit                    0
====================================
```

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```
ERROR FREE SECONDS
CODE                    10
FRAME                   10
CRC                     10
E_bit                   10
====================================
I.U.T. final STATUS ALARM
Normal Operational Frames
====================================
Time stop               : 16/Aug/1999 14:27:31
```

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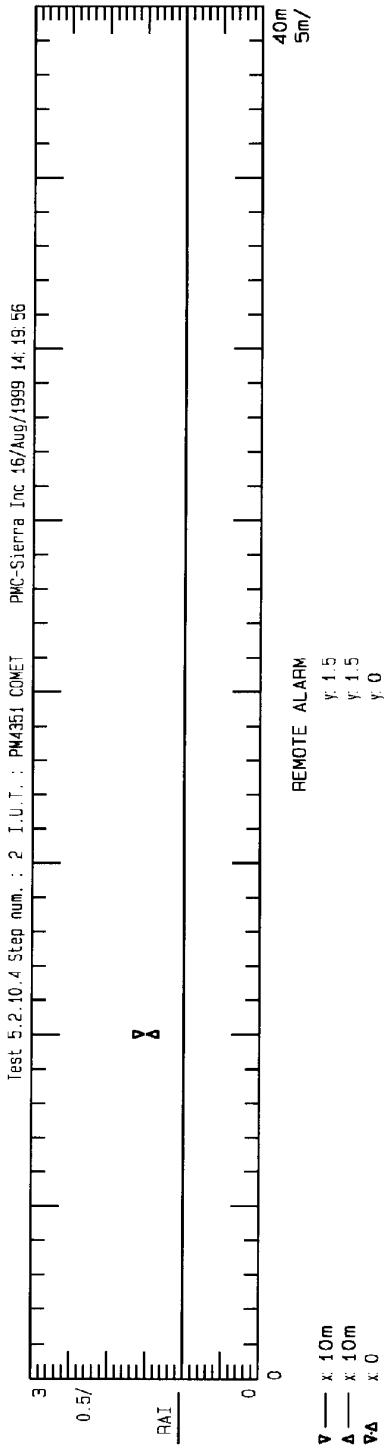

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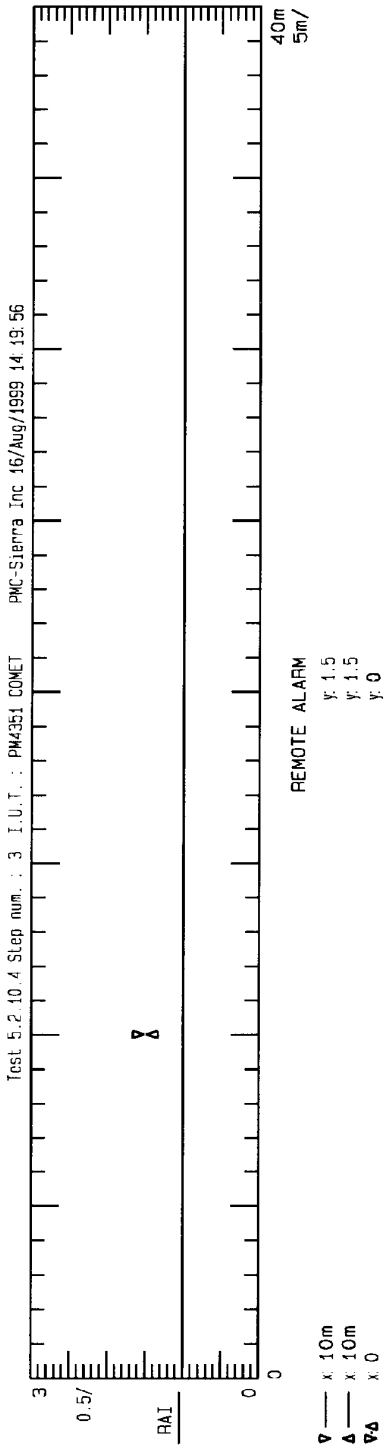

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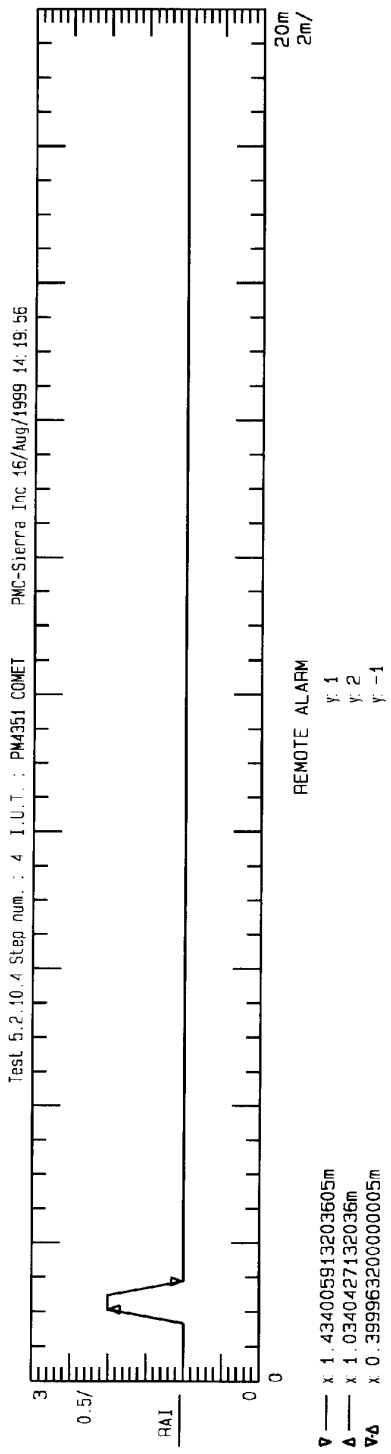

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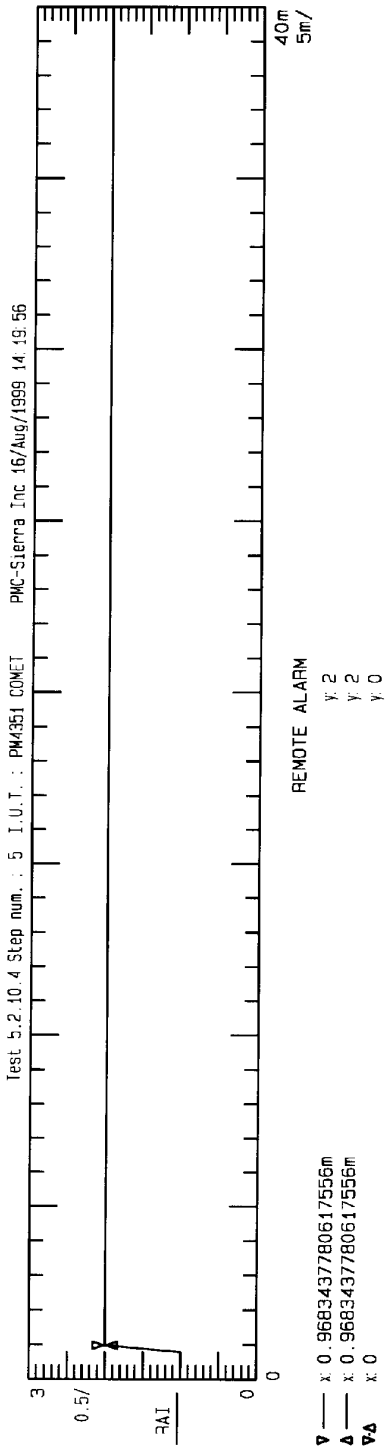

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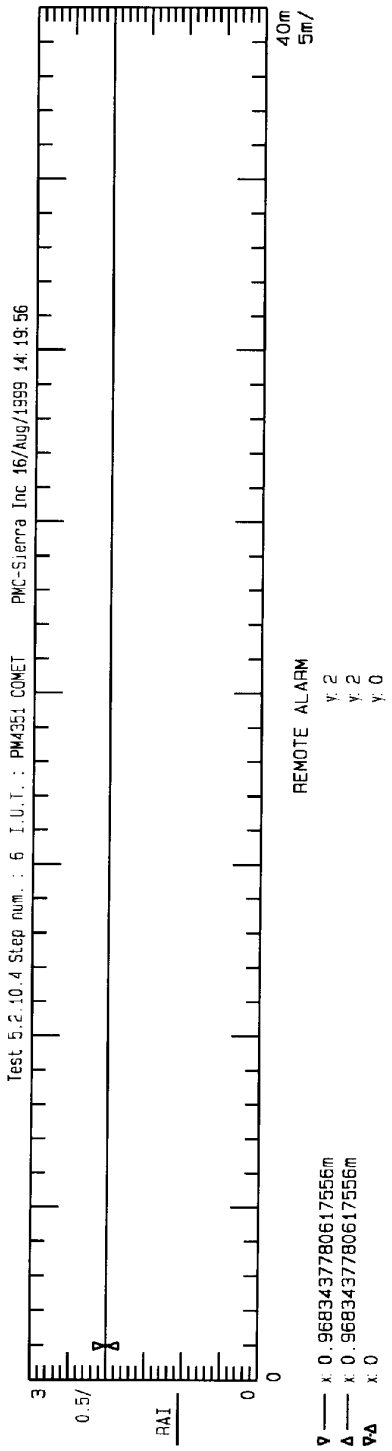

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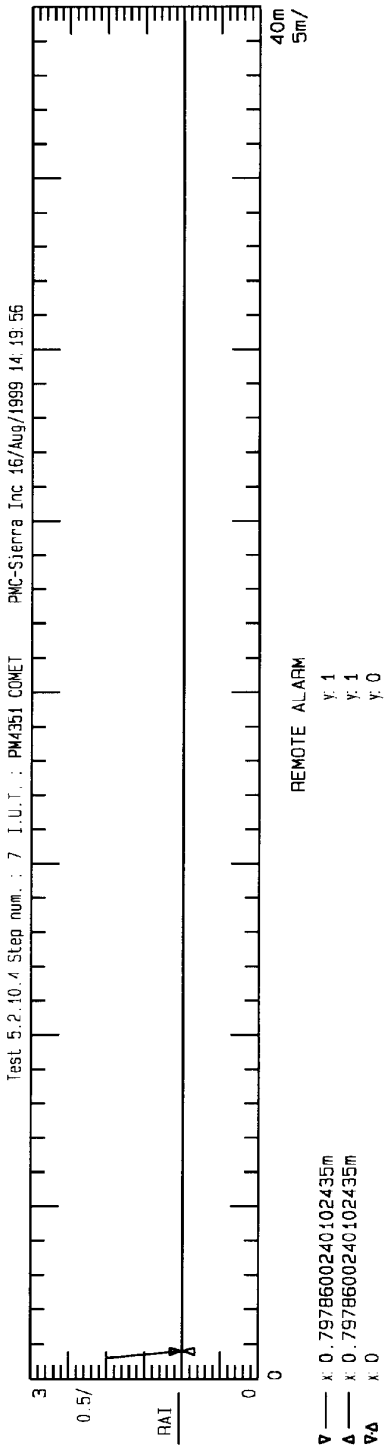

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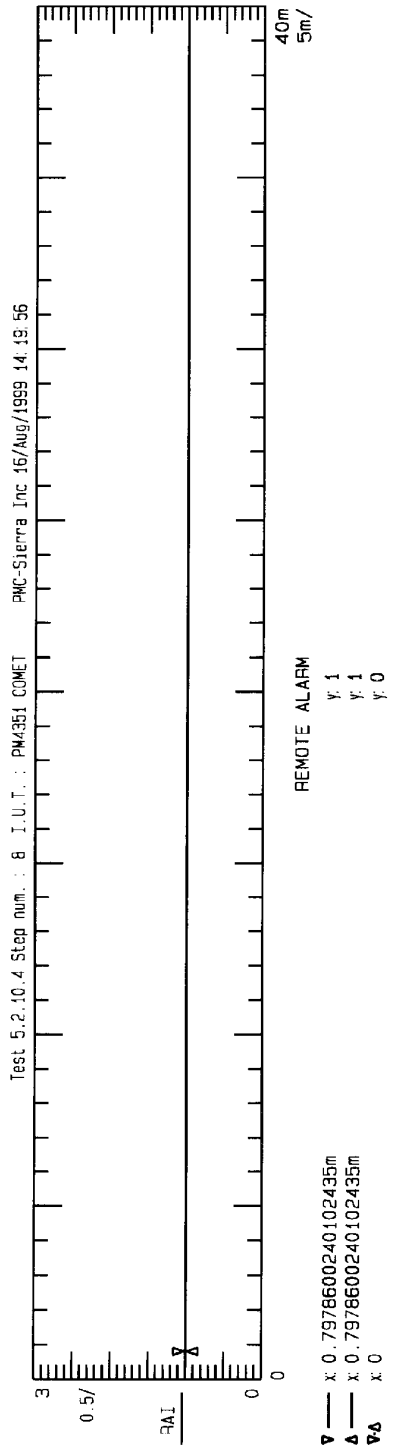

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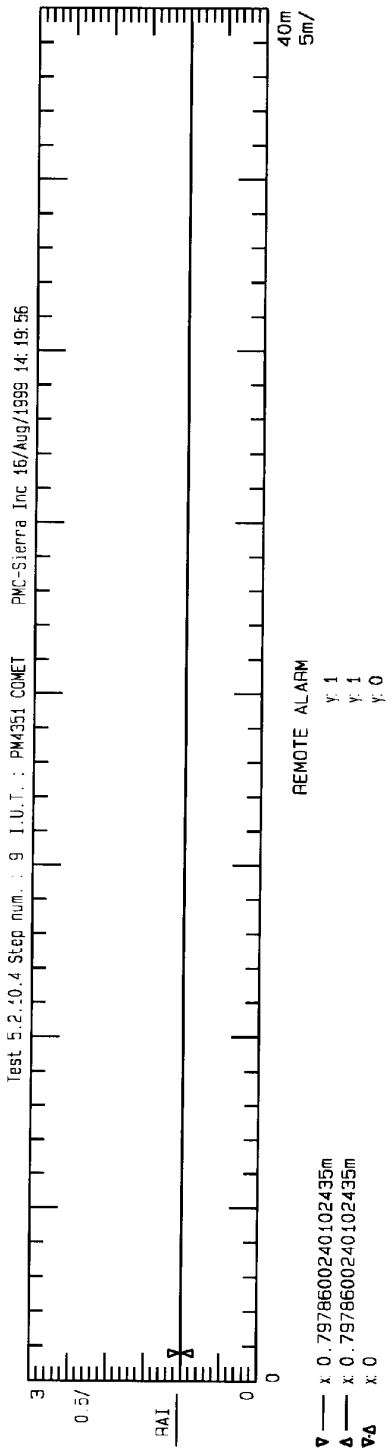

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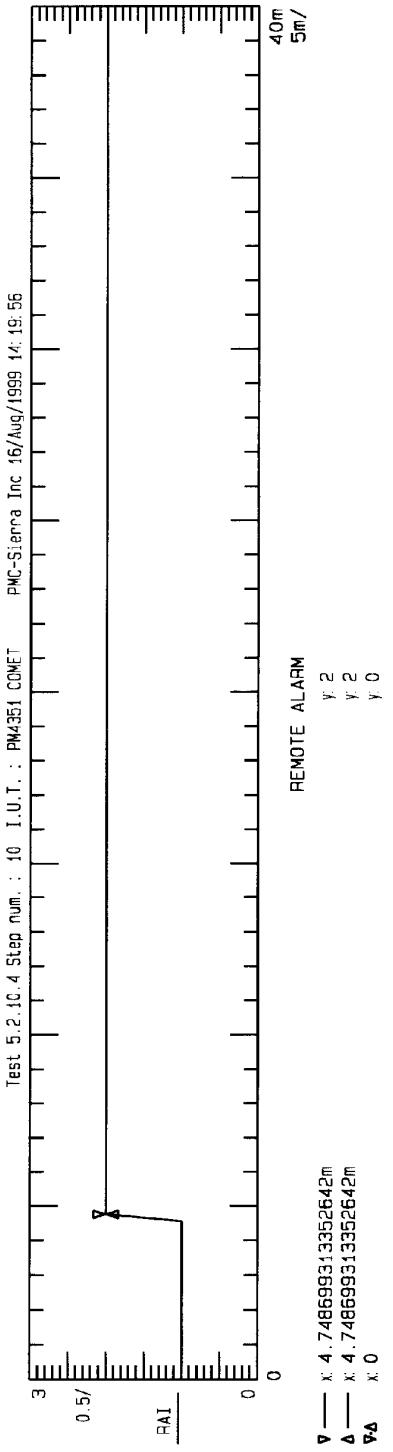

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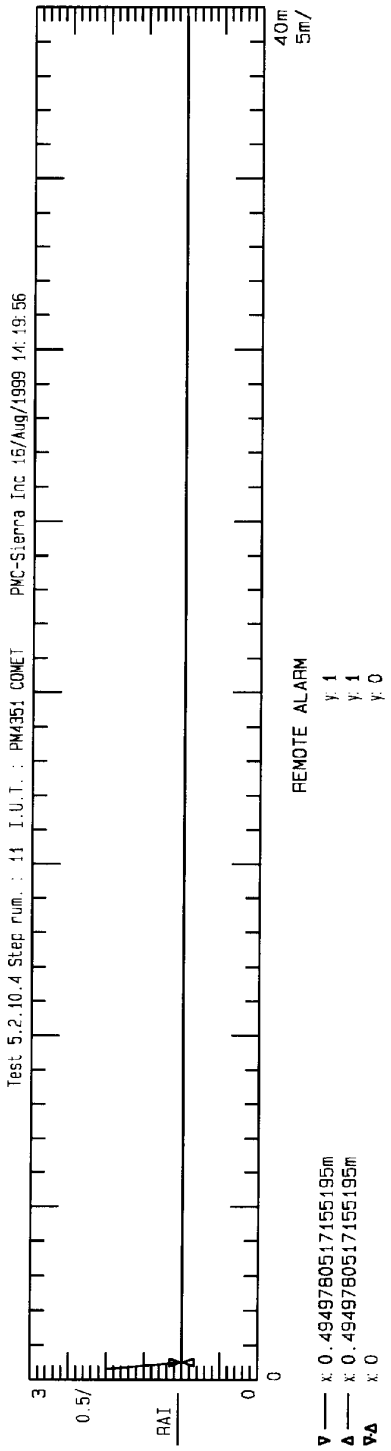

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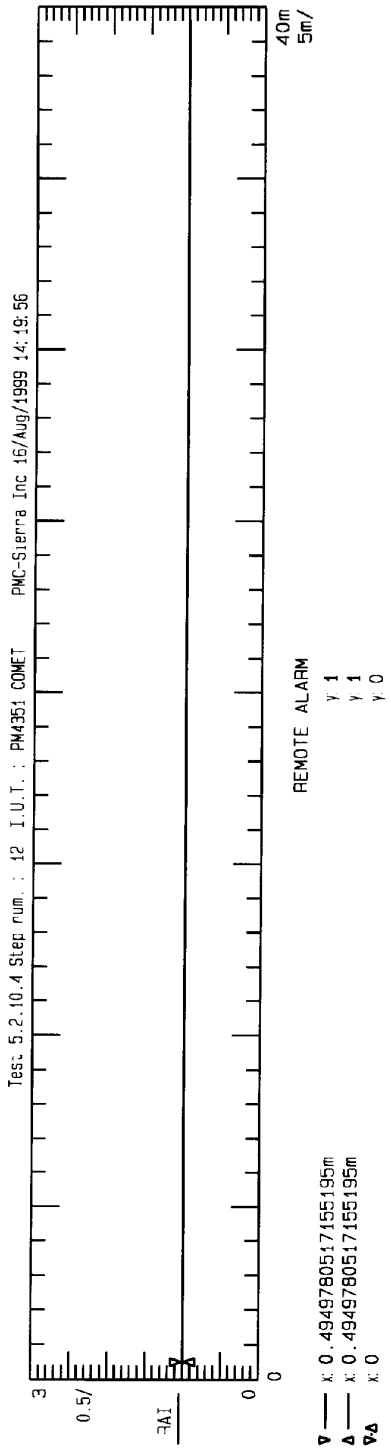

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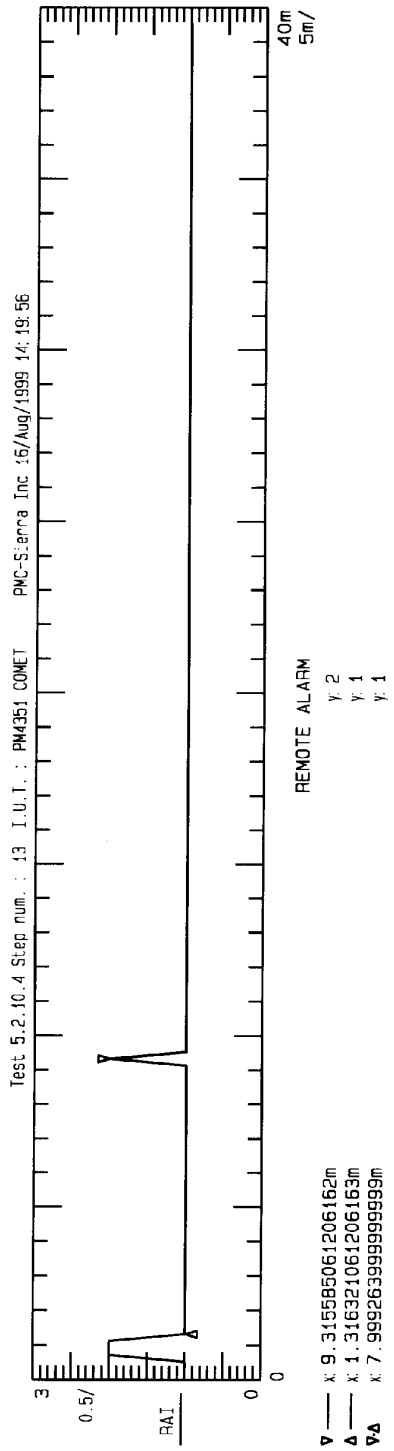

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```
Data retrieved from : ./TB/AUS14_120/dir6/C211a

I.U.T.   PM4351 COMET      PMC-Sierra Inc
Test :       5.2.11A  Pulse shape & amplitude of a mark (pulse)
Test Sequence created on : 16/Aug/1999 14:19:56
TEST RESULT : PASSED
Details of test results
|=======|==============================|
| I.U.T.|      PULSES                  |
|       |                              |
| state | sample | positive | negative |
|=======|========|==========|==========|
|  F 1  |  one   |  passed  |  passed  |
|-------|--------|----------|----------|
@
```

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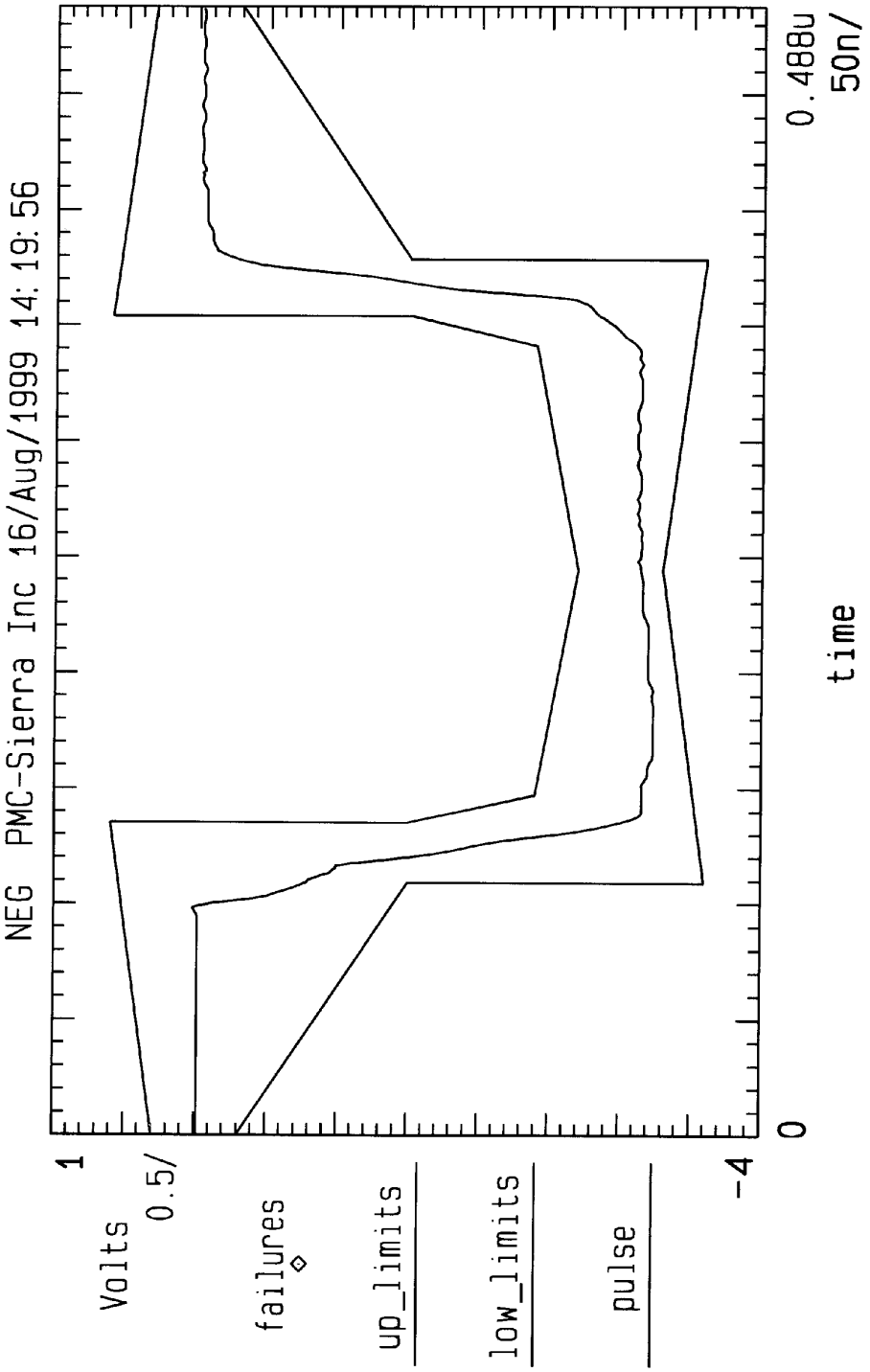

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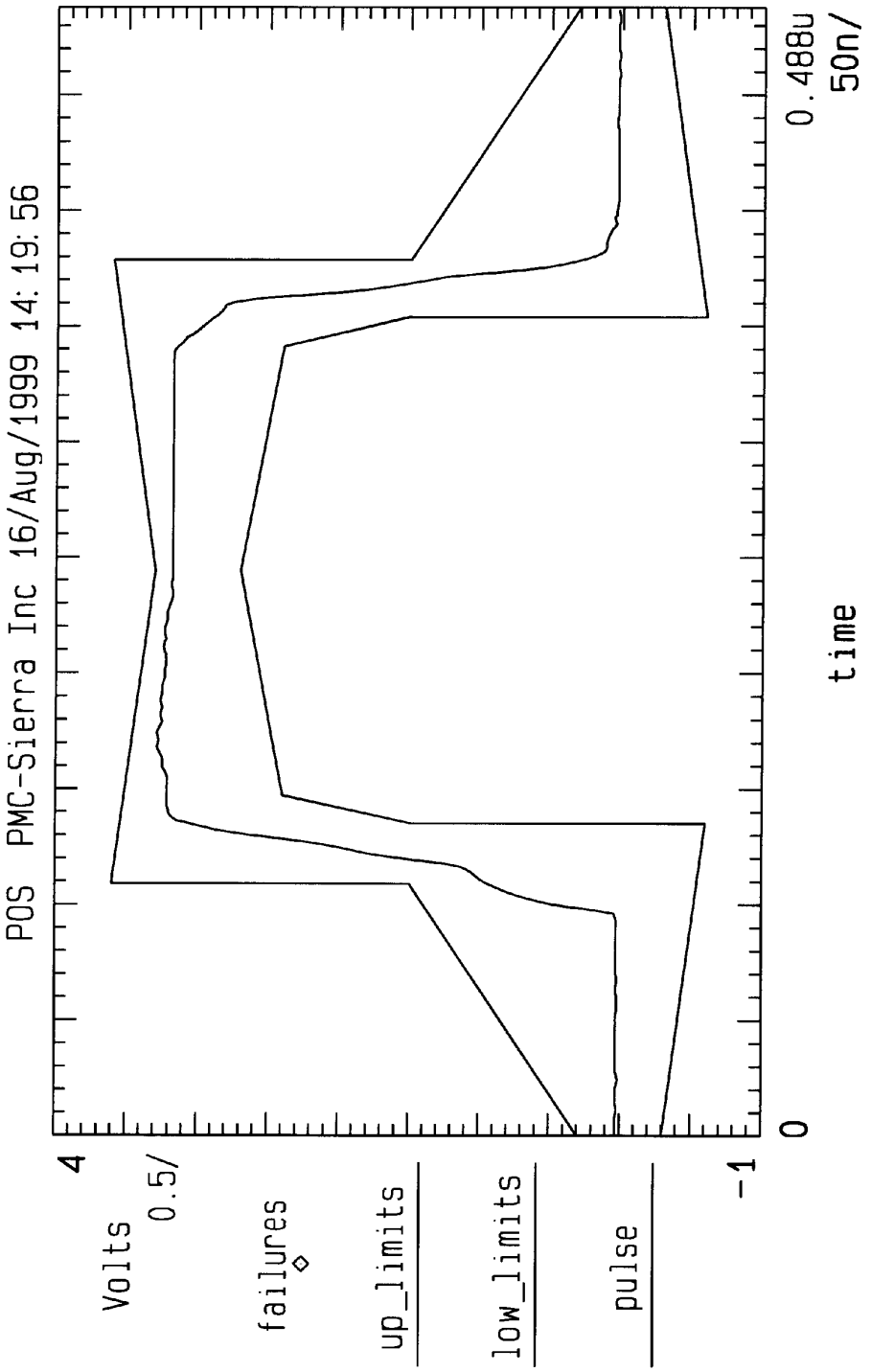

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```
Data retrieved from : ./TE/AUS14_120/dir6/C211b

I.U.T.   PM4351 COMET     PMC-Sierra Inc
Test :      5.2.11B  Peak Voltage of a space (no pulse)
Test Sequence created on : 16/Aug/1999 14:19:56
TEST RESULT : PASSED
Trace of test execution case space after pulses
PARTIAL TEST RESULT : PASSED
Trace of test execution
|=======|============================|
| I.U.T.|  partial test results      |
|       |----------------------------|
| state | sample |pos pulse|neg pulse|
|=======|========|=========|=========|
|  F 1  | one    | passed  | passed  |
|-------|--------|---------|---------|
Trace of test execution case space before pulses
PARTIAL TEST RESULT : PASSED
Trace of test execution
|=======|============================|
| I.U.T.|  partial test results      |
|       |----------------------------|
| state | sample |pos pulse|neg pulse|
|=======|========|=========|=========|
|  F 1  | one    | passed  | passed  |
|-------|--------|---------|---------|
@
```

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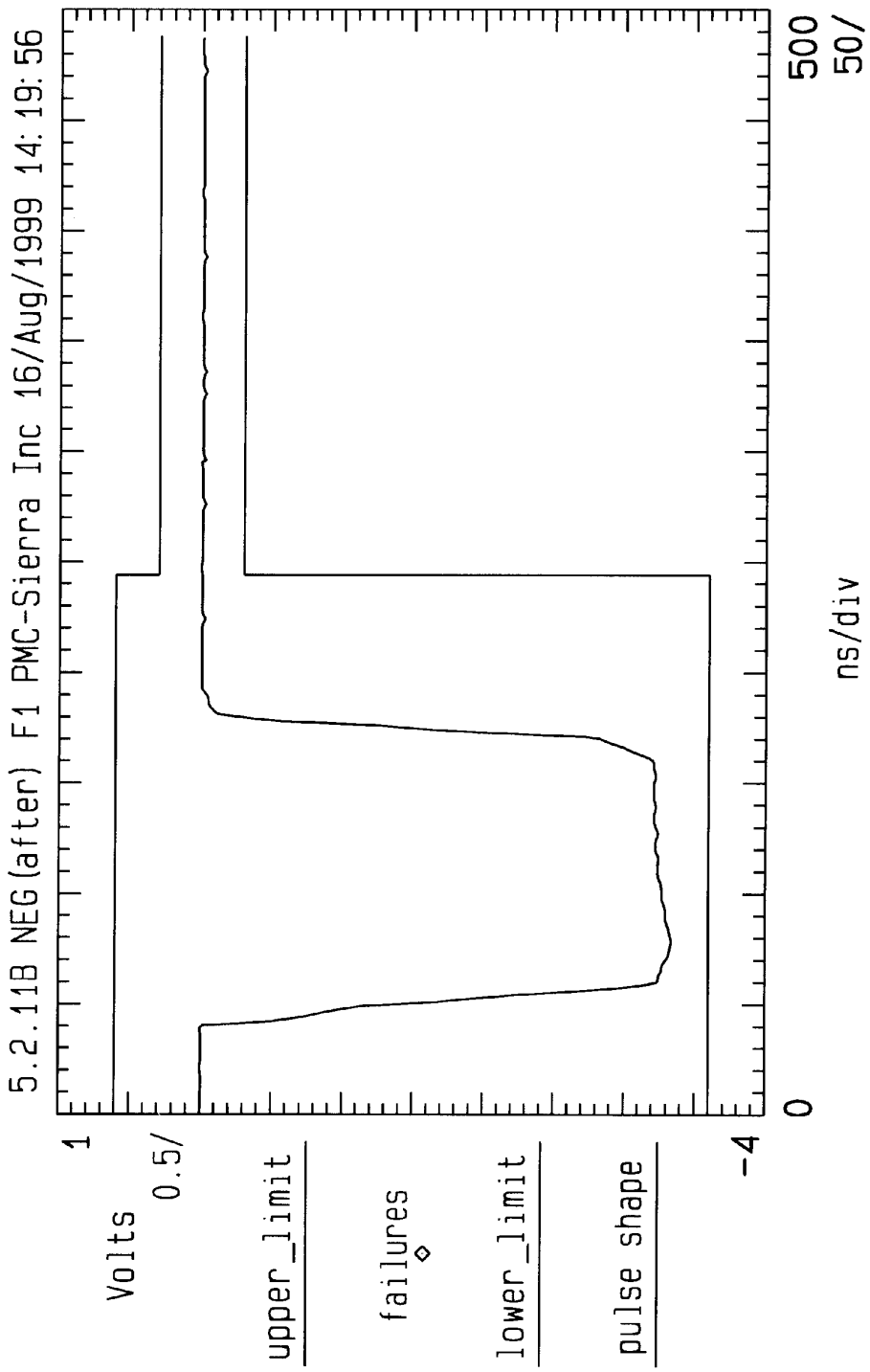

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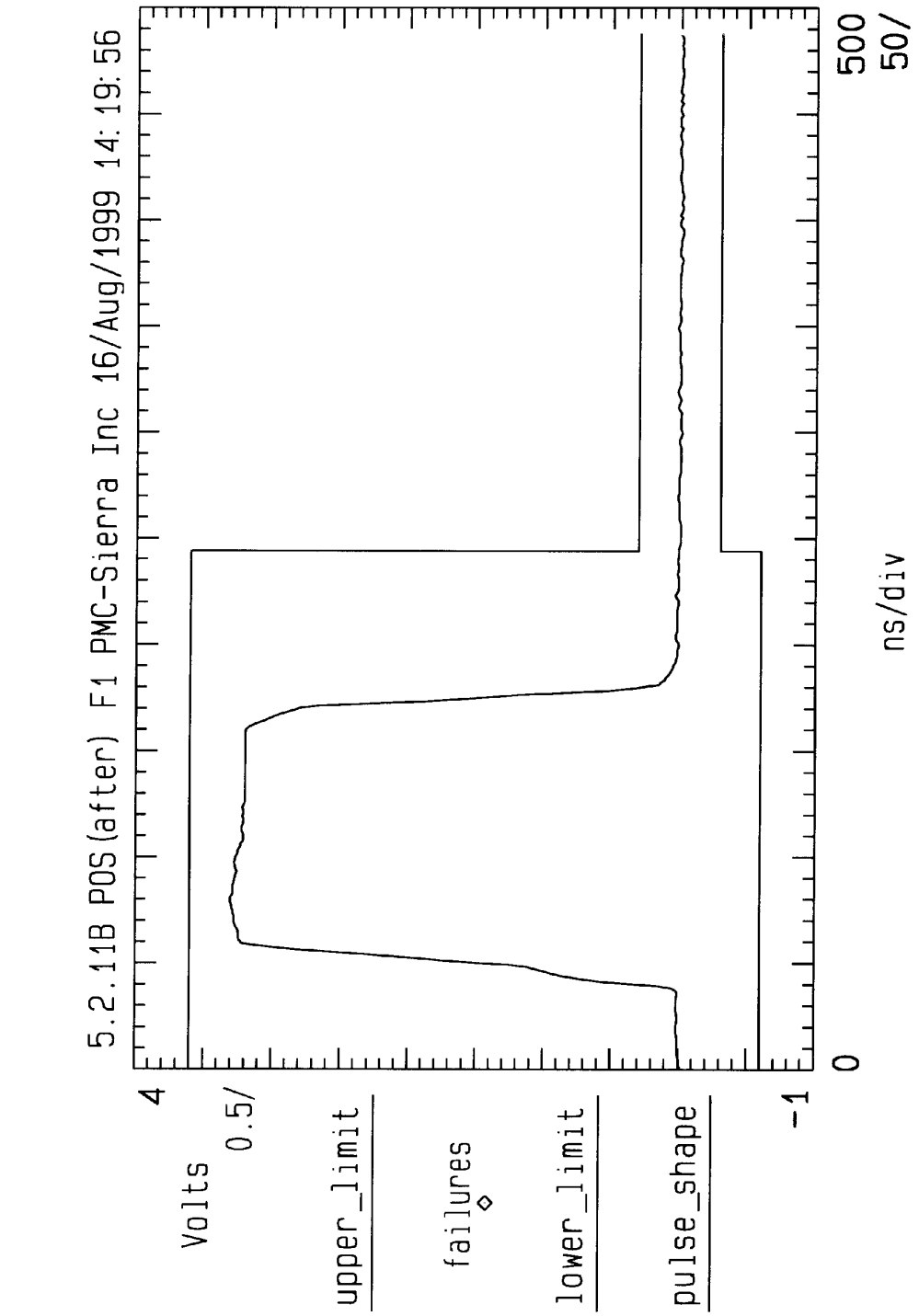

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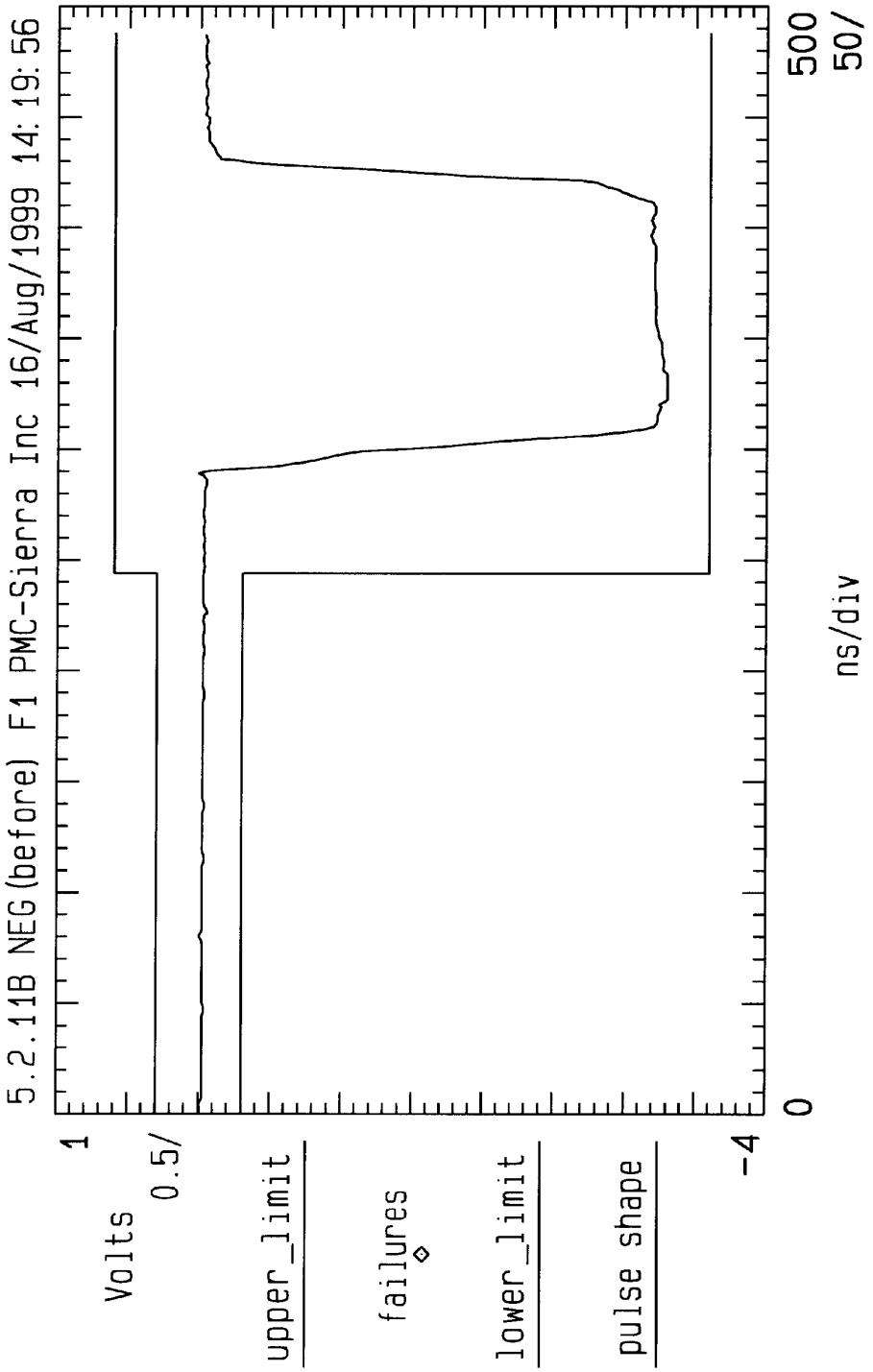

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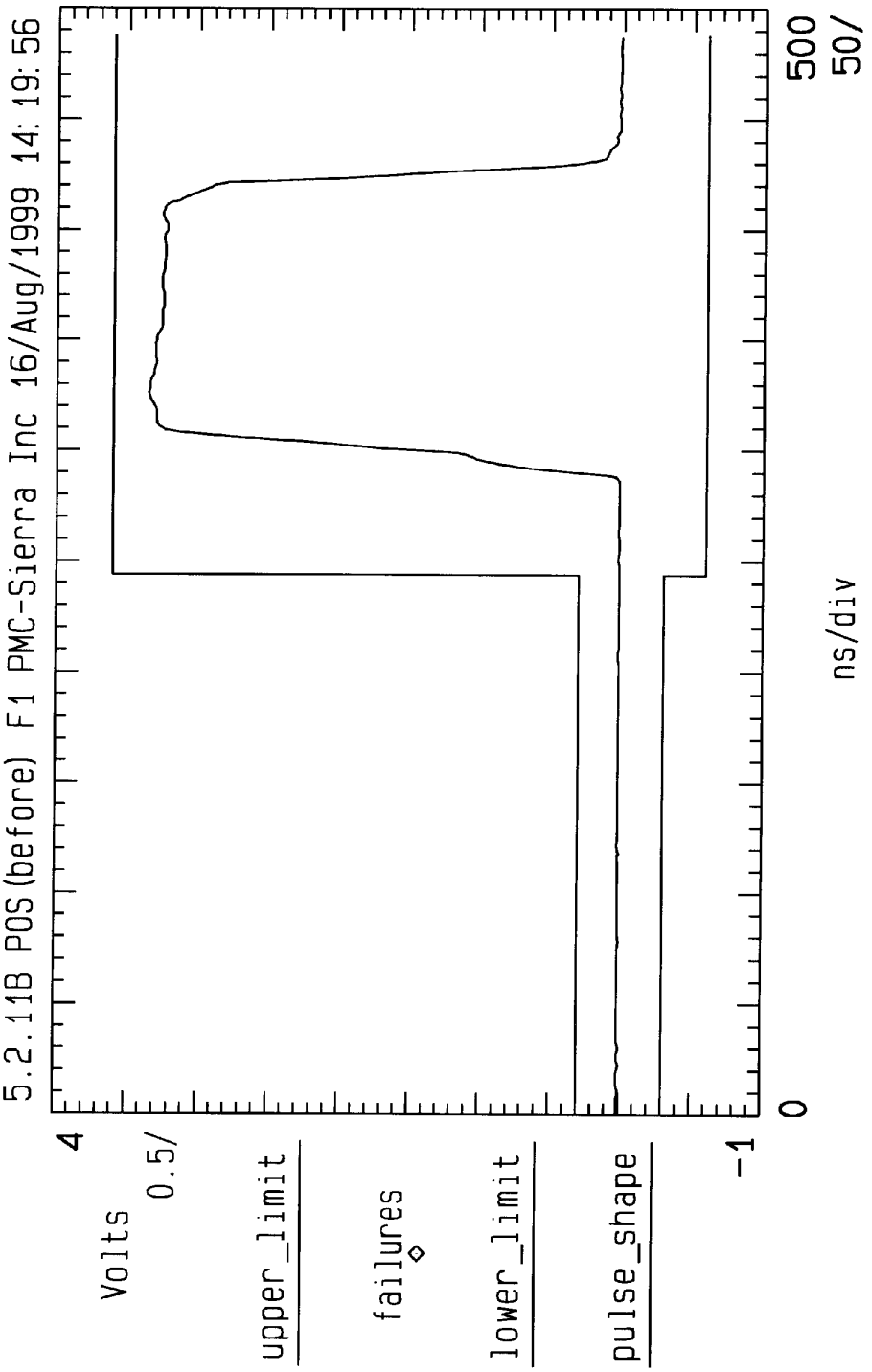

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```
Data retrieved from : ./TE/AUS14_120/dir6/C2122c

I.U.T.    PM4351 COMET      PMC-Sierra Inc
Test : 5.2.11C  Ratio of the amplitude of pos & neg pulses at the centre
Test Sequence created on : 16/Aug/1999 14:19:56
TEST RESULT : PASSED
Trace of test execution
|========|=========|========|=======|
| I.U.T  | Sample  | Ampl.  | Pass  |
| state  |         | Ratio  | Fail  |
|========|=========|========|=======|
|  F 1   | one     | 1.015  | pass  |
|--------|---------|--------|-------|
@
```

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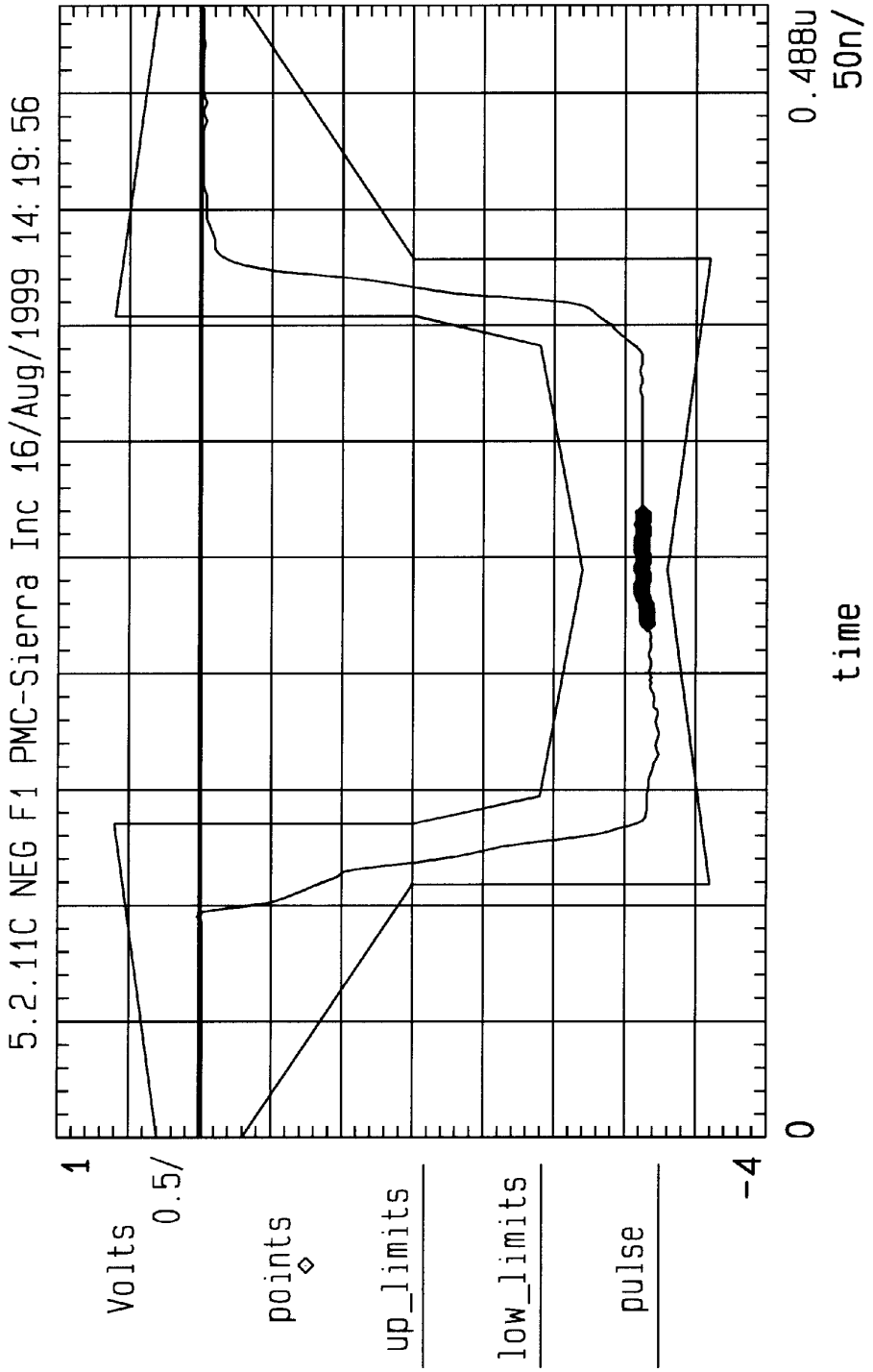

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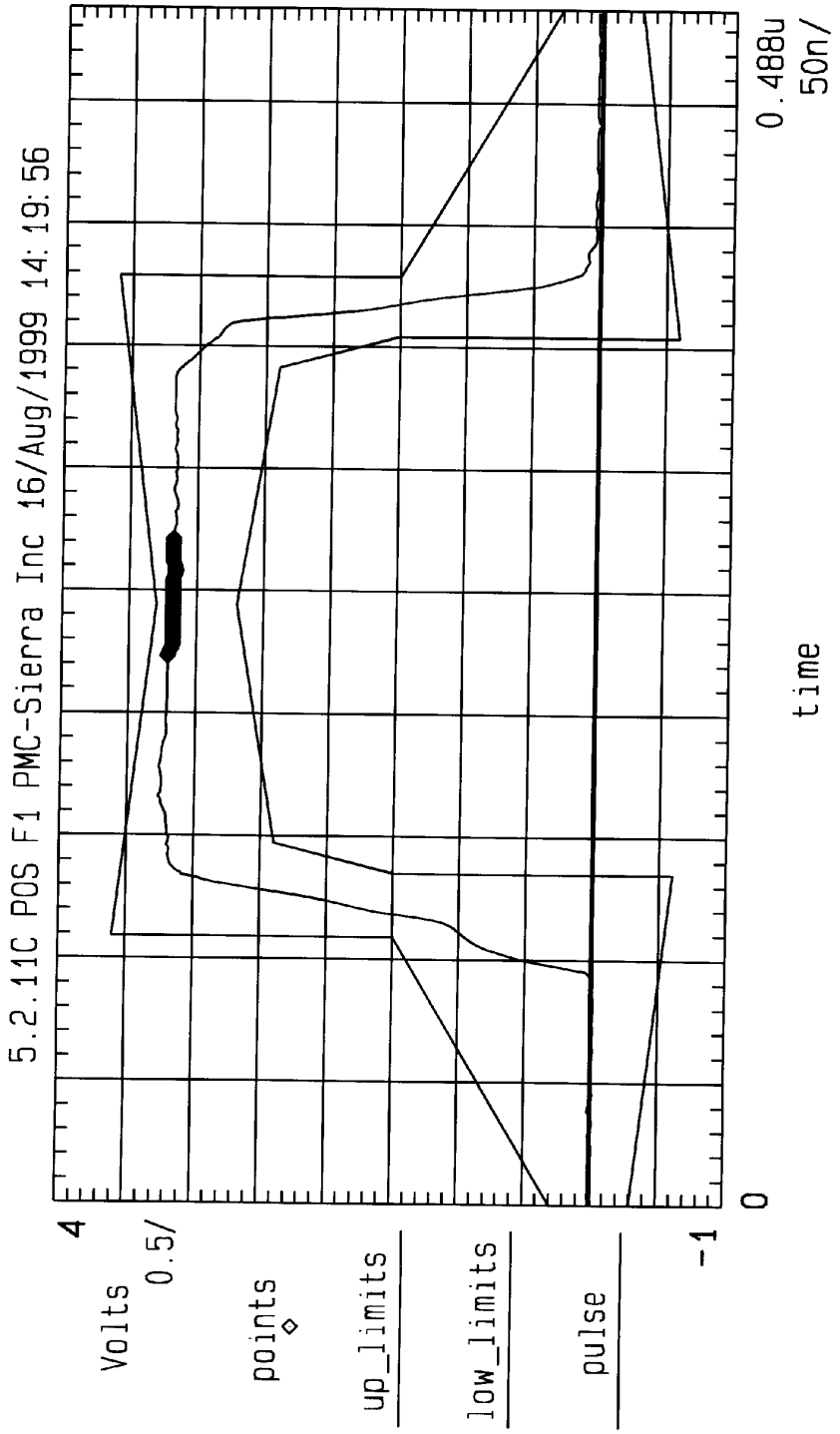

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```
Data retrieved from : ./TE/AUS14_120/dir7/C211d

I.U.T.    PM4351 COMET      PMC-Sierra Inc
Test : 5.2.11D  Ratio of pos & neg pulse widths at 1/2 amplitude
Test Sequence created on : 16/Aug/1999 15:03:19
TEST RESULT : PASSED
Trace of test execution
|=======|========|========|========|========|======|
| I.U.T | Sample | Width  | Width  | Widths | Pass |
| state |        | pos ns | neg ns | RATIO  | Fail |
|=======|========|========|========|========|======|
|  F 1  | one    |    250 |    250 |  1.000 | pass |
|-------|--------|--------|--------|--------|------|
@
```

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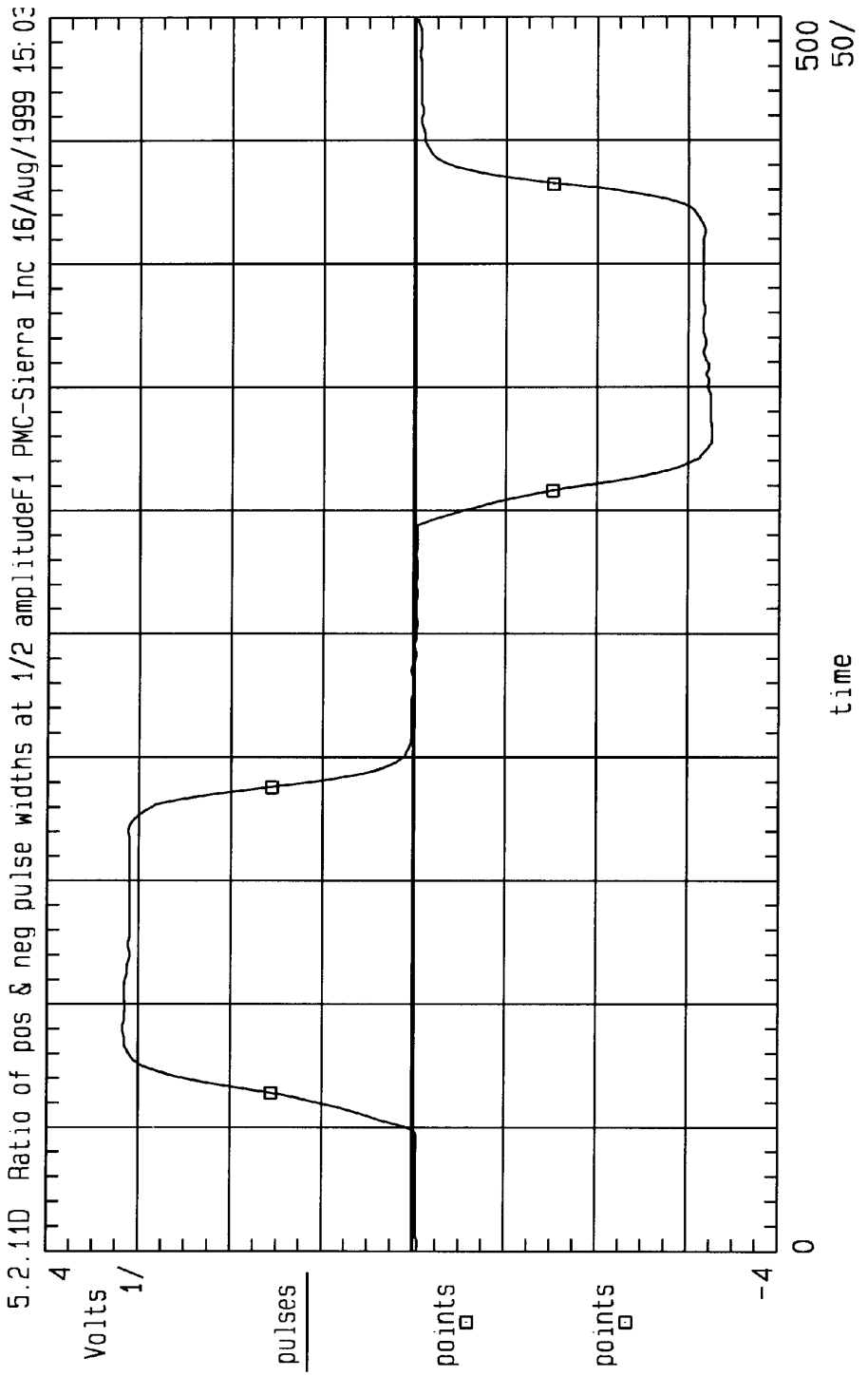

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```
Data retrieved from : ./TE/AUS14_120/dir6/C2122a

I.U.T.   PM4351 COMET     PMC-Sierra Inc
Test :      5.2.12.2A  Return loss at the input port
Test Sequence created on : 16/Aug/1999 14:19:56
TEST RESULT : PASSED
@
```

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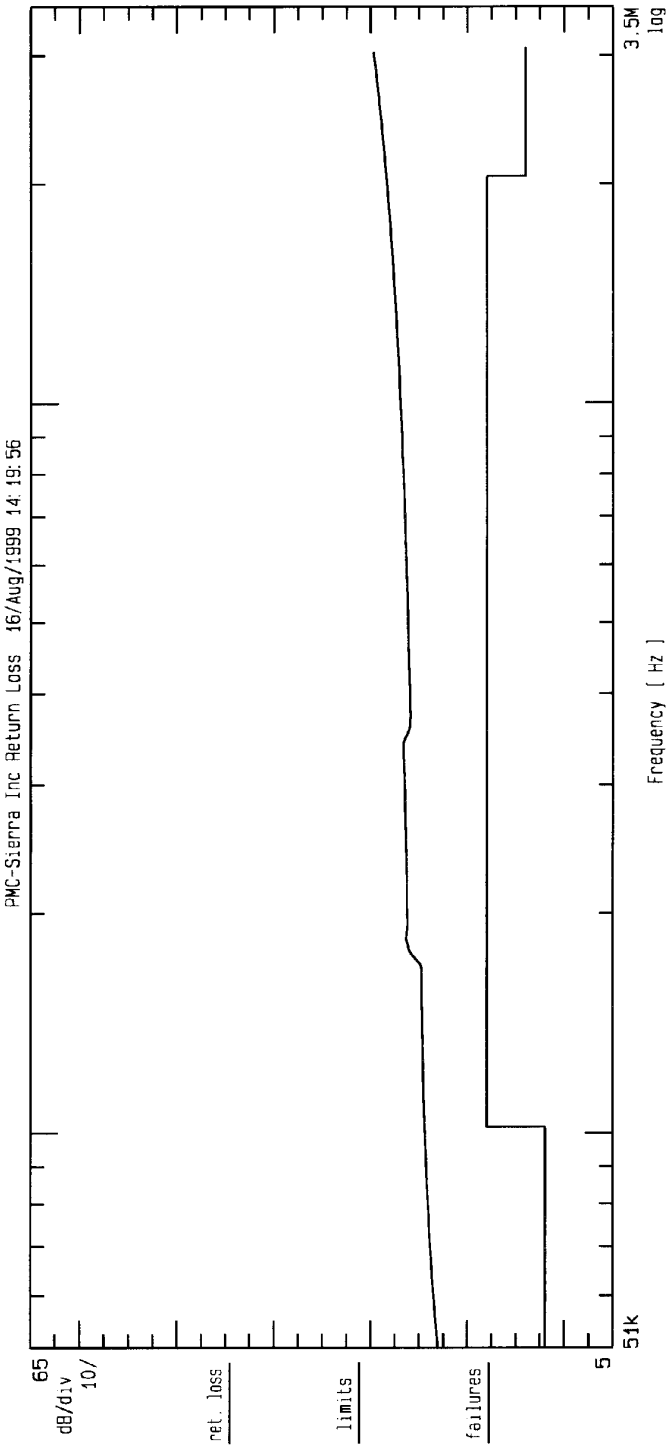

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```
Data retrieved from : ./TE/AUS14_120/dir6/C2122b

--------------------------------------------------------------------------------
I.U.T.   PM4351 COMET     PMC-Sierra Inc
Test Sequence created on : 16/Aug/1999 14:19:56
Test 5.2.12.2B  Signal Reflection Immunity
TEST RESULT : PASSED
--------------------------------------------------------------------------------
TEST RESULTS SUMMARY
|=================================================================|
|      | Partial|          E_bit            | NT clock freq.|  IUT |
| STEP | Result | Error count | Error free |               | SYNC |
|      |        |             |  seconds   |    [ Hz ]     |      |
|======|========|=============|============|===============|======|
| 1.a  | passed |           0 |         60 |  2048000      |  yes |
| 2.a  | passed |           0 |         60 |  2048000      |  yes |
| 3.a  | passed |           0 |         60 |  2048000      |  yes |
| 4.a  | passed |           0 |         60 |  2048000      |  yes |
|------|--------|-------------|------------|---------------|------|
| 1.b  | passed |           0 |         60 |  2048102.4    |  yes |
| 2.b  | passed |           0 |         60 |  2048102.4    |  yes |
| 3.b  | passed |           0 |         60 |  2048102.4    |  yes |
| 4.b  | passed |           0 |         60 |  2048102.4    |  yes |
|------|--------|-------------|------------|---------------|------|
| 1.c  | passed |           0 |         60 |  2047897.6    |  yes |
| 2.c  | passed |           0 |         60 |  2047897.6    |  yes |
| 3.c  | passed |           0 |         60 |  2047897.6    |  yes |
| 4.c  | passed |           0 |         60 |  2047897.6    |  yes |
|------|--------|-------------|------------|---------------|------|
--------------------------------------------------------------------------------
step 1.a
PARTIAL TEST RESULT : passed
TEST CONDITIONS   step 1.a
Network Emulator frequency CLOCK : 2048000 MHz
With    cable a/b -10% output level NT
Time start               : 16/Aug/1999 14:41:40
I.U.T.   SIGNAL ANALYSIS
TEST PERIOD             60  s
====================================
ALARM SECONDS
POWER LOSS              0
SIGNAL LOSS             0
AIS                     0
*  FRAME                0
CRC MULTI FRAME LOSS    0
PATTERN                 0
REMOTE ALARM            0
====================================
ERRORS COUNT
BIT                     0
CODE                    0
FRAME                   0
CRC                     0
E_BIT                   0
====================================
ERROR FREE SECONDS
BIT                     60
CODE                    60
FRAME                   60
```

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```
CRC                    60
E_BIT                  60
====================================
I.U.T. final STATUS ALARM
Normal Operational Frames
====================================
Time stop               : 16/Aug/1999 14:42:40
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
step 2.a
PARTIAL TEST RESULT : passed
TEST CONDITIONS   step 2.a
Network Emulator frequency CLOCK : 2048000 MHz
With    cable b/a -10% output level NT
Time start              : 16/Aug/1999 14:42:52
I.U.T.   SIGNAL ANALYSIS
TEST PERIOD            60  s
====================================
ALARM SECONDS
POWER LOSS             0
SIGNAL LOSS            0
AIS                    0
FRAME                  0
CRC MULTI FRAME LOSS   0
PATTERN                0
REMOTE ALARM           0
====================================
ERRORS COUNT
BIT                    0
CODE                   0
FRAME                  0
CRC                    0
E_BIT                  0
====================================
ERROR FREE SECONDS
BIT                    60
CODE                   60
FRAME                  60
CRC                    60
E_BIT                  60
====================================
I.U.T. final STATUS ALARM
Normal Operational Frames
====================================
*  Time stop            : 16/Aug/1999 14:43:52
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
step 3.a
PARTIAL TEST RESULT : passed
TEST CONDITIONS   step 3.a
Network Emulator frequency CLOCK : 2048000 MHz
Without cable a/b +10% output level NT
Time start              : 16/Aug/1999 14:44:04
I.U.T.   SIGNAL ANALYSIS
TEST PERIOD            60  s
====================================
ALARM SECONDS
POWER LOSS             0
SIGNAL LOSS            0
AIS                    0
```

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```
FRAME                    0
CRC MULTI FRAME LOSS     0
PATTERN                  0
REMOTE ALARM             0
=====================================
ERRORS COUNT
BIT                      0
CODE                     0
FRAME                    0
CRC                      0
E_BIT                    0
=====================================
ERROR FREE SECONDS
BIT                      60
CODE                     60
FRAME                    60
CRC                      60
E_BIT                    60
=====================================
I.U.T. final STATUS ALARM
Normal Operational Frames
=====================================
Time stop                : 16/Aug/1999 14:45:04
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
step 4.a
PARTIAL TEST RESULT : passed
TEST CONDITIONS   step 4.a
Network Emulator frequency CLOCK : 2048000 MHz
Without cable b/a +10% output level NT
Time start               : 16/Aug/1999 14:45:16
I.U.T.   SIGNAL ANALYSIS
TEST PERIOD              60  s
=====================================
ALARM SECONDS
POWER LOSS               0
SIGNAL LOSS              0
AIS                      0
FRAME                    0
CRC MULTI FRAME LOSS     0
PATTERN                  0
REMOTE ALARM             0
=====================================
ERRORS COUNT
BIT                      0
CODE                     0
FRAME                    0
CRC                      0
E_BIT                    0
=====================================
ERROR FREE SECONDS
BIT                      60
CODE                     60
FRAME                    60
CRC                      60
E_BIT                    60
=====================================
I.U.T. final STATUS ALARM
Normal Operational Frames
=====================================
```

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```
Time stop                : 16/Aug/1999 14:46:16
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
step 1.b
PARTIAL TEST RESULT : passed
TEST CONDITIONS   step 1.b
Network Emulator frequency CLOCK : 2048102.4 MHz
With    cable a/b -10% output level NT
Time start               : 16/Aug/1999 14:46:47
I.U.T.   SIGNAL ANALYSIS
TEST PERIOD              60  s
====================================
ALARM SECONDS
POWER LOSS               0
SIGNAL LOSS              0
AIS                      0
FRAME                    0
CRC MULTI FRAME LOSS     0
PATTERN                  0
REMOTE ALARM             0
=======================================
ERRORS COUNT
BIT                      0
CODE                     0
FRAME                    0
CRC                      0
E_BIT                    0
=======================================
ERROR FREE SECONDS
BIT                      60
CODE                     60
FRAME                    60
CRC                      60
E_BIT                    60
=======================================
I.U.T. final STATUS ALARM
Normal Operational Frames
=======================================
Time stop                : 16/Aug/1999 14:47:48
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
step 2.b
PARTIAL TEST RESULT : passed
TEST CONDITIONS   step 2.b
* Network Emulator frequency CLOCK : 2048102.4 MHz
With    cable b/a -10% output level NT
Time start               : 16/Aug/1999 14:48:00
I.U.T.   SIGNAL ANALYSIS
TEST PERIOD              60  s
====================================
ALARM SECONDS
POWER LOSS               0
SIGNAL LOSS              0
AIS                      0
FRAME                    0
CRC MULTI FRAME LOSS     0
PATTERN                  0
REMOTE ALARM             0
=======================================
ERRORS COUNT
```

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```
BIT                     0
CODE                    0
FRAME                   0
CRC                     0
E_BIT                   0
====================================
ERROR FREE SECONDS
BIT                     60
CODE                    60
FRAME                   60
CRC                     60
E_BIT                   60
====================================
I.U.T. final STATUS ALARM
Normal Operational Frames
====================================
Time stop               : 16/Aug/1999 14:49:00
------------------------------------------------------------------------------
------------------------------------------------------------------------------
step 3.b
PARTIAL TEST RESULT : passed
TEST CONDITIONS   step 3.b
Network Emulator frequency CLOCK : 2048102.4 MHz
Without cable a/b +10% output level NT
Time start              : 16/Aug/1999 14:49:13
I.U.T.   SIGNAL ANALYSIS
TEST PERIOD             60  s
====================================
ALARM SECONDS
POWER LOSS              0
SIGNAL LOSS             0
AIS                     0
FRAME                   0
CRC MULTI FRAME LOSS    0
PATTERN                 0
REMOTE ALARM            0
====================================
ERRORS COUNT
BIT                     0
CODE                    0
FRAME                   0
CRC                     0
E_BIT                   0
====================================
ERROR FREE SECONDS
BIT                     60
CODE                    60
FRAME                   60
CRC                     60
E_BIT                   60
====================================
I.U.T. final STATUS ALARM
Normal Operational Frames
====================================
Time stop               : 16/Aug/1999 14:50:13
------------------------------------------------------------------------------
------------------------------------------------------------------------------
step 4.b
PARTIAL TEST RESULT : passed
TEST CONDITIONS   step 4.b
```

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```
Network Emulator frequency CLOCK : 2048102.4 MHz
Without cable b/a +10% output level NT
Time start               : 16/Aug/1999 14:50:25
I.U.T.   SIGNAL ANALYSIS
TEST PERIOD              60  s
====================================
ALARM SECONDS
POWER LOSS               0
SIGNAL LOSS              0
AIS                      0
FRAME                    0
CRC MULTI FRAME LOSS     0
PATTERN                  0
REMOTE ALARM             0
====================================
ERRORS COUNT
BIT                      0
CODE                     0
FRAME                    0
CRC                      0
E_BIT                    0
====================================
ERROR FREE SECONDS
BIT                      60
CODE                     60
FRAME                    60
CRC                      60
E_BIT                    60
====================================
I.U.T. final STATUS ALARM
Normal Operational Frames
====================================
Time stop                : 16/Aug/1999 14:51:26
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
step 1.c
PARTIAL TEST RESULT : passed
TEST CONDITIONS   step 1.c
Network Emulator frequency CLOCK : 2047897.6 MHz
With    cable a/b -10% output level NT
Time start               : 16/Aug/1999 14:51:58
I.U.T.   SIGNAL ANALYSIS
TEST PERIOD              60  s
====================================
ALARM SECONDS
POWER LOSS               0
SIGNAL LOSS              0
AIS                      0
FRAME                    0
CRC MULTI FRAME LOSS     0
PATTERN                  0
REMOTE ALARM             0
====================================
ERRORS COUNT
BIT                      0
CODE                     0
FRAME                    0
CRC                      0
E_BIT                    0
====================================
```

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```
ERROR FREE SECONDS
BIT                     60
CODE                    60
FRAME                   60
CRC                     60
E_BIT                   60
====================================
I.U.T. final STATUS ALARM
Normal Operational Frames
====================================
Time stop               : 16/Aug/1999 14:52:58
------------------------------------------------------------------------------
------------------------------------------------------------------------------
step 2.c
PARTIAL TEST RESULT : passed
TEST CONDITIONS   step 2.c
Network Emulator frequency CLOCK : 2047897.6 MHz
With    cable b/a -10% output level NT
Time start              : 16/Aug/1999 14:53:10
I.U.T.   SIGNAL ANALYSIS
TEST PERIOD             60  s
==================================
ALARM SECONDS
POWER LOSS              0
SIGNAL LOSS             0
AIS                     0
FRAME                   0
CRC MULTI FRAME LOSS    0
PATTERN                 0
REMOTE ALARM            0
====================================
ERRORS COUNT
BIT                     0
CODE                    0
FRAME                   0
CRC                     0
E_BIT                   0
====================================
ERROR FREE SECONDS
BIT                     60
CODE                    60
FRAME                   60
CRC                     60
E_BIT                   60
====================================
I.U.T. final STATUS ALARM
Normal Operational Frames
====================================
Time stop               : 16/Aug/1999 14:54:10
------------------------------------------------------------------------------
------------------------------------------------------------------------------
step 3.c
PARTIAL TEST RESULT : passed
TEST CONDITIONS   step 3.c
Network Emulator frequency CLOCK : 2047897.6 MHz
Without cable a/b +10% output level NT
Time start              : 16/Aug/1999 14:54:22
I.U.T.   SIGNAL ANALYSIS
TEST PERIOD             60  s
==================================
```

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```
ALARM SECONDS
POWER LOSS              0
SIGNAL LOSS             0
AIS                     0
FRAME                   0
CRC MULTI FRAME LOSS    0
PATTERN                 0
REMOTE ALARM            0
====================================
ERRORS COUNT
BIT                     0
CODE                    0
FRAME                   0
CRC                     0
E_BIT                   0
====================================
ERROR FREE SECONDS
BIT                     60
CODE                    60
FRAME                   60
CRC                     60
E_BIT                   60
====================================
I.U.T. final STATUS ALARM
Normal Operational Frames
====================================
Time stop                : 16/Aug/1999 14:55:22
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
step 4.c
PARTIAL TEST RESULT : passed
TEST CONDITIONS   step 4.c
Network Emulator frequency CLOCK : 2047897.6 MHz
Without cable b/a +10% output level NT
Time start               : 16/Aug/1999 14:55:34
I.U.T.   SIGNAL ANALYSIS
TEST PERIOD             60  s
====================================
ALARM SECONDS
POWER LOSS              0
SIGNAL LOSS             0
AIS                     0
FRAME                   0
CRC MULTI FRAME LOSS    0
*  PATTERN              0
REMOTE ALARM            0
====================================
ERRORS COUNT
BIT                     0
CODE                    0
FRAME                   0
CRC                     0
E_BIT                   0
====================================
ERROR FREE SECONDS
BIT                     60
CODE                    60
FRAME                   60
CRC                     60
E_BIT                   60
```

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=====================================
I.U.T. final STATUS ALARM
Normal Operational Frames
=====================================
Time stop                : 16/Aug/1999 14:56:34
-------------------------------------------------------------------------------
@
```

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Data retrieved from : ./TE/AUS14_120/dir12/C281_6dB_Cable

I.U.T. PM4351 COMET PMC-Sierra Inc
Test : 5.2.12.3A Tolerance to Jitter (with and without 6dB cable) (payld lpbk?)
TEST EXECUTION CONDITIONS : 6db cable inserted
Test Sequence created on : 16/Aug/1999 15:30:07
TEST RESULT : PASSED

JITTER of the NT EMULATOR		I.U.T. OUTPUT SIGNAL					
		NT clock freq. 2.048 MHz nominal		NT clock freq. 2.048 MHz plus 50 ppm		NT clock freq. 2.048 MHz minus 50 ppm	
Freq. [Hz]	Amplit. [UI]	NOF	SYNC	NOF	SYNC	NOF	SYNC
1	2.6	yes	yes	yes	yes	yes	yes
2	2.3						
3	2.1						
6	1.87						
10	1.7						
20	1.5	yes	yes	yes	yes	yes	yes
30	1.5						
100	1.5						
300	1.5						
1000	1.5						
2000	1.5						
2400	1.5	yes	yes	yes	yes	yes	yes
3600	1						
6000	0.6						
10000	0.36						
18000	0.2	yes	yes	yes	yes	yes	yes
36000	0.2						
60000	0.2						
100000	0.2	yes	yes	yes	yes	yes	yes

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Data retrieved from : ./TE/AUS14_120/dir12/C281_no_6dB_Cable

I.U.T. PM4351 COMET PMC-Sierra Inc
Test : 5.2.12.3A Tolerance to Jitter (with and without 6dB cable) (payld lpbk?)
TEST EXECUTION CONDITIONS : 6db cable not inserted
Test Sequence created on : 16/Aug/1999 15:30:07
TEST RESULT : PASSED

JITTER of the	I.U.T. OUTPUT SIGNAL					
NT EMULATOR	NT clock freq.		NT clock freq.		NT clock freq.	
	2.048 MHz		2.048 MHz		2.048 MHz	
	nominal		plus 50 ppm		minus 50 ppm	
Freq. Amplit.						
[Hz] [UI]	NOF	SYNC	NOF	SYNC	NOF	SYNC
1 2.6	yes	yes	yes	yes	yes	yes
2 2.3						
3 2.1						
6 1.87						
10 1.7						
20 1.5	yes	yes	yes	yes	yes	yes
30 1.5						
100 1.5						
300 1.5						
1000 1.5						
2000 1.5						
2400 1.5	yes	yes	yes	yes	yes	yes
3600 1						
6000 0.6						
10000 0.36						
18000 0.2	yes	yes	yes	yes	yes	yes
36000 0.2						
60000 0.2						
100000 0.2	yes	yes	yes	yes	yes	yes

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Data retrieved from : ./TE/AUS14_120/dir12/C2821_6dB_Cable

I.U.T. PM4351 COMET PMC-Sierra Inc
Test : 5.2.12.3B Intrinsic JItter (with and without 6dB cable) (payld lpbk?)
TEST EXECUTION CONDITIONS : 6db cable inserted Test Sequence created on : 16/Aug/1999 15:30:07
TEST RESULT : PASSED

NT JITTER	NT clock freq 2.048 MHz nominal				NT clock freq 2.048 MHz plus 50 ppm				NT clock freq 2.048 MHz minus 50 ppm			
	IUT's signal		Measurem. filters measurem. limits 20 Hz 1.5 UI	18000 Hz 0.2 UI	IUT's signal		Measurem. filters measurem. limits 20 Hz 1.5 UI	18000 Hz 0.2 UI	IUT's signal		Measurem. Filters measurem. limits 20 Hz 1.5 UI	18000 Hz 0.2 UI
[Hz] [UI]	NOF	SYN	Jitt	V	Jitt	V	NOF	SYN	Jitt	V	Jitt	V	NOF	SYN	Jitt	V	Jitt	V
1 0	yes	yes	0.014r	p	0.008r	p	yes	yes	0.016r	p	0.008r	p	yes	yes	0.019r	p	0.008r	p
2 0																		
3 0																		
6 0																		
10 0																		
20 0	yes	yes	0.014r	p	0.008r	p	yes	yes	0.015r	p	0.008r	p	yes	yes	0.018r	p	0.008r	p
30 0																		
100 0																		
300 0																		
1000 0																		
2000 0																		
2400 0	yes	yes	0.014r	p	0.008r	p	yes	yes	0.015r	p	0.008r	p	yes	yes	0.018r	p	0.008r	p
3600 0																		
6000 0																		
10000 0																		
18000 0	yes	yes	0.014r	p	0.008r	p	yes	yes	0.015r	p	0.008r	p	yes	yes	0.018r	p	0.008r	p
36000 0																		
60000 0																		
100000 0	yes	yes	0.014r	p	0.008r	p	yes	yes	0.016r	p	0.008r	p	yes	yes	0.019r	p	0.008r	p

IUT's SIGNAL : SIGNAL Received from I.U.T. Jitt : Measured Jitter R : Measure range 10 I
NOF : NORMAL OPERATION FRAMES V : Partial Verdict r : Measure range 1 U
SYNC : I.U.T. synchronized to the Network X : Result Overrange
@

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Data retrieved from : ./TE/AUS14_120/dir12/C2821_no_6dB_Cable

I.U.T. PM4351 COMET PMC-Sierra Inc
Test : 5.2.12.3B Intrinsic JItter (with and without 6dB cable) (payld lpbk?)
TEST EXECUTION CONDITIONS : 6db cable not inserted Test Sequence created on : 16/Aug/1999 15:30:07
TEST RESULT : PASSED

	NT clock freq 2.048 MHz						NT clock freq 2.048 MHz						NT clock freq 2.048 MHz					
	nominal						plus 50 ppm						minus 50 ppm					
NT JITTER	IUT's		Measurem. filters measurem. limits				IUT's		Measurem. filters measurem. limits				IUT's		Measurem. Filters measurem. limits			
	signal		20 Hz 1.5 UI		18000 Hz 0.2 UI		signal		20 Hz 1.5 UI		18000 Hz 0.2 UI		signal		20 Hz 1.5 UI		18000 Hz 0.2 UI	
[Hz] [UI]	NOF	SYN	Jitt	V	Jitt	V	NOF	SYN	Jitt	V	Jitt	V	NOF	SYN	Jitt	V	Jitt	V
1 0	yes	yes	0.018r	p	0.008r	p	yes	yes	0.016r	p	0.008r	p	yes	yes	0.019r	p	0.008r	p
2 0																		
3 0																		
6 0																		
10 0																		
20 0	yes	yes	0.009r	p	0.008r	p	yes	yes	0.015r	p	0.008r	p	yes	yes	0.018r	p	0.008r	p
30 0																		
100 0																		
300 0																		
1000 0																		
2000 0																		
2400 0	yes	yes	0.016r	p	0.008r	p	yes	yes	0.015r	p	0.008r	p	yes	yes	0.019r	p	0.008r	p
3600 0																		
6000 0																		
10000 0																		
18000 0	yes	yes	0.015r	p	0.008r	p	yes	yes	0.015r	p	0.008r	p	yes	yes	0.018r	p	0.008r	p
36000 0																		
60000 0																		
100000 0	yes	yes	0.014r	p	0.008r	p	yes	yes	0.015r	p	0.008r	p	yes	yes	0.018r	p	0.008r	p

IUT's SIGNAL : SIGNAL Received from I.U.T. Jitt : Measured Jitter R : Measure range 10 UI
NOF : NORMAL OPERATION FRAMES V : Partial Verdict r : Measure range 1 UI
SYNC : I.U.T. synchronized to the Network X : Result Overrange
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```
Data retrieved from : ./TE/AUS14_120/dir7/C213d

I.U.T.   PM4351 COMET     PMC-Sierra Inc
Test  : 5.2.13.3  CRC multiframe alignment (D sequence) step n. : 1
Test Sequence created on : 16/Aug/1999 15:03:19
Time start               : 16/Aug/1999 15:05:22
P.R.A.S.G. sequences :
D-1.1
LOOP
I.U.T.   SIGNAL ANALYSIS
TEST PERIOD             10  s
====================================
ALARM SECONDS
POWER  LOSS             0
SIGNAL LOSS             0
AIS                     0
CRC MULTI FRAME LOSS    0
REMOTE ALARM            0
====================================
ERRORS COUNT
CODE                    0
FRAME                   0
CRC                     0
E_bit                   0
====================================
ERROR FREE SECONDS
CODE                    10
FRAME                   10
CRC                     10
E_bit                   10
====================================
I.U.T. final STATUS ALARM
Normal Operational Frames
====================================
Time stop               : 16/Aug/1999 15:05:32
--------------------------------------------------------------------------------
I.U.T.   PM4351 COMET     PMC-Sierra Inc
Test  : 5.2.13.3  CRC multiframe alignment (D sequence) step n. : 2
Test Sequence created on : 16/Aug/1999 15:03:19
Time start               : 16/Aug/1999 15:05:38
P.R.A.S.G. sequences :
D-2.1
D-2.2
* D-2.3
D-2.4
D-2.5
D-2.6
D-2.7
LOOP
I.U.T.   SIGNAL ANALYSIS
TEST PERIOD             10  s
====================================
ALARM SECONDS
POWER  LOSS             0
SIGNAL LOSS             0
AIS                     0
CRC MULTI FRAME LOSS    0
REMOTE ALARM            1
====================================
```

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```
ERRORS COUNT
CODE                    0
FRAME                   0
CRC                     0
E_bit                   0
====================================
ERROR FREE SECONDS
CODE                    10
FRAME                   10
CRC                     10
E_bit                   10
====================================
I.U.T. final STATUS ALARM
Normal Operational Frames
====================================
Time stop               : 16/Aug/1999 15:05:48
------------------------------------------------------------------------------
I.U.T.   PM4351 COMET     PMC-Sierra Inc
Test  : 5.2.13.3  CRC multiframe alignment (D sequence) step n. : 3
Test Sequence created on : 16/Aug/1999 15:03:19
Time start              : 16/Aug/1999 15:05:57
P.R.A.S.G. sequences :
D-3.1
D-3.2
LOOP
I.U.T.   SIGNAL ANALYSIS
TEST PERIOD             10  s
====================================
ALARM SECONDS
POWER  LOSS             0
SIGNAL LOSS             0
AIS                     0
CRC MULTI FRAME LOSS    0
REMOTE ALARM            10
====================================
ERRORS COUNT
CODE                    0
FRAME                   0
CRC                     0
E_bit                   0
====================================
ERROR FREE SECONDS
CODE                    10
FRAME                   10
CRC                     10
E_bit                   10
====================================
I.U.T. final STATUS ALARM
REMOTE ALARM
====================================
Time stop               : 16/Aug/1999 15:06:07
------------------------------------------------------------------------------
I.U.T.   PM4351 COMET     PMC-Sierra Inc
Test  : 5.2.13.3  CRC multiframe alignment (D sequence) step n. : 4
Test Sequence created on : 16/Aug/1999 15:03:19
Time start              : 16/Aug/1999 15:06:15
P.R.A.S.G. sequences :
D-4.1
D-4.2
D-4.3
```

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```
D-4.4
D-4.5
END
I.U.T.   SIGNAL ANALYSIS
TEST PERIOD              10  s
====================================
ALARM SECONDS
POWER  LOSS              0
SIGNAL LOSS              0
AIS                      0
CRC MULTI FRAME LOSS     0
REMOTE ALARM             1
====================================
ERRORS COUNT
CODE                     0
FRAME                    0
CRC                      0
E_bit                    0
====================================
ERROR FREE SECONDS
CODE                     10
FRAME                    10
CRC                      10
E_bit                    10
====================================
I.U.T. final STATUS ALARM
Normal Operational Frames
====================================
Time stop                : 16/Aug/1999 15:06:26
------------------------------------------------------------------------------
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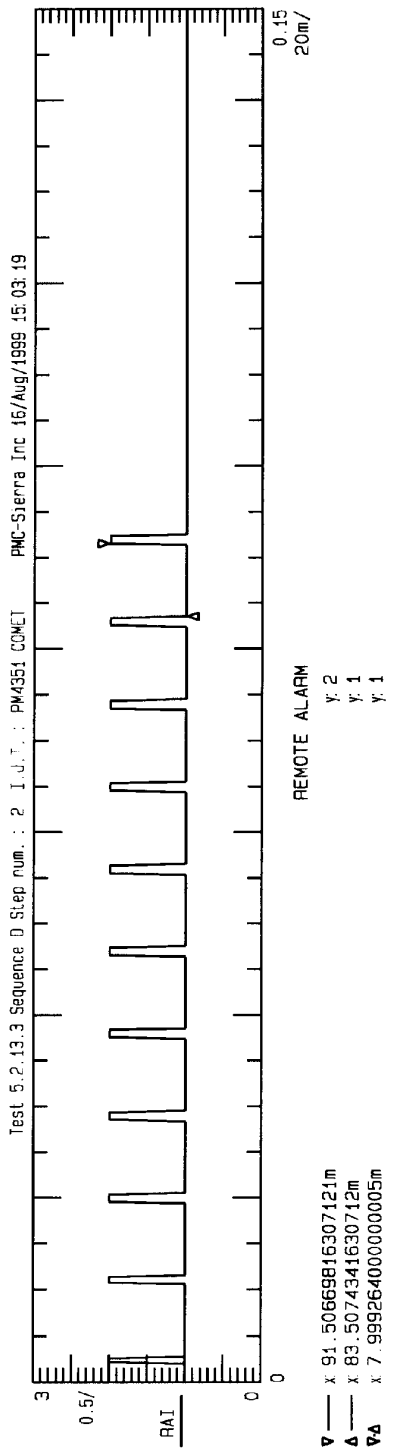

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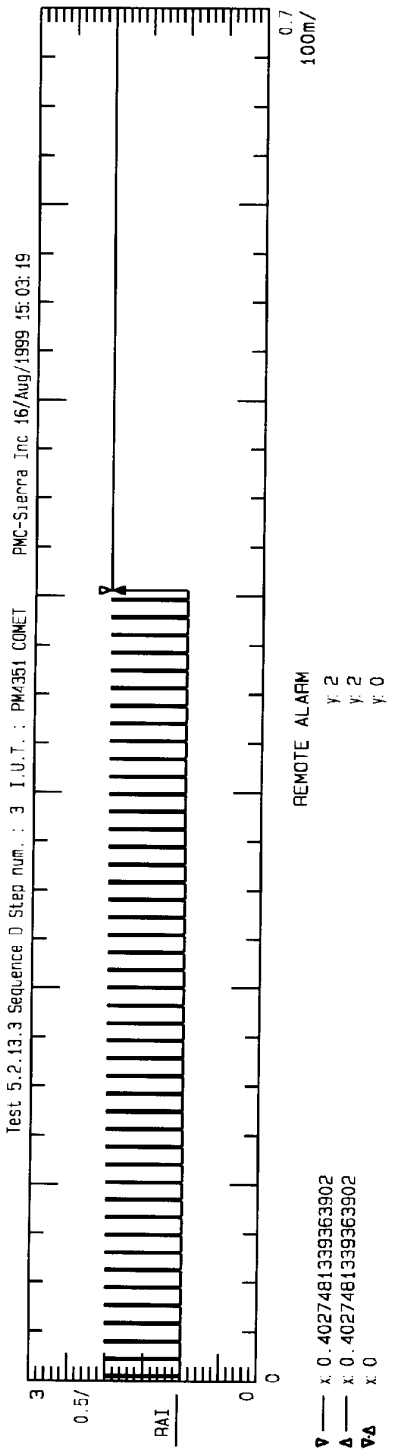

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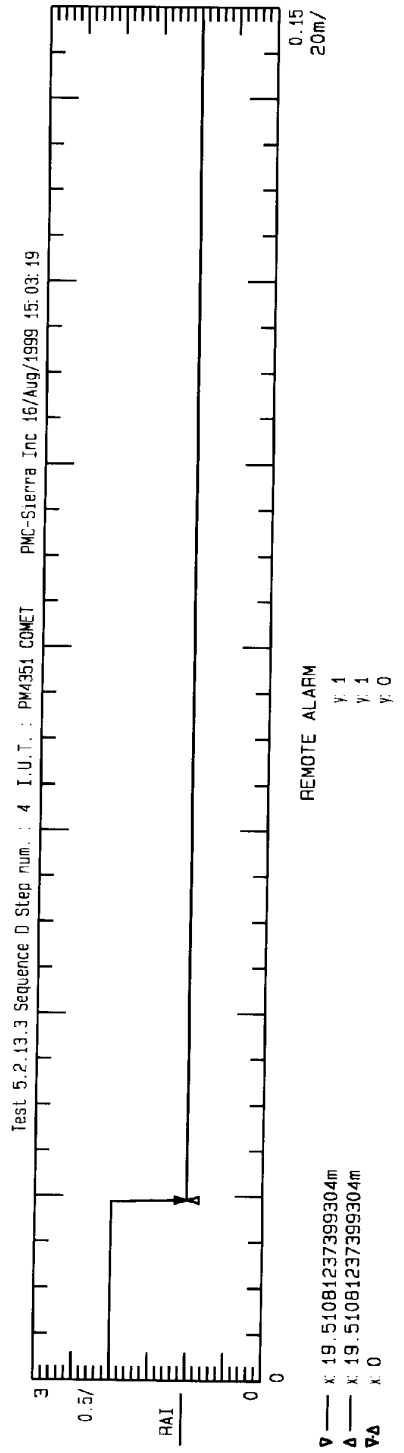

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Data retrieved from : ./TE/AUS14_120/dir1/C214

I.U.T. PM4351 COMET PMC-Sierra Inc
Test : 5.2.14.1.1 CE to Network Alarm Bit
Test Sequence created on : 16/Aug/1999 12:21:10
TEST RESULT : PASSED

Signal from Network	ALARMS					ERRORS count					ERROR FREE SECONDS				
	SIG	AIS	RAI	PML	CRC	BIT	CODE	FRAME	CRC	E_bit	BIT	CODE	FRAME	CRC	E_bit
LOS	no	no	YES	no	no	0	0	0	0	0	0	5	5	5	5
AIS	no	no	YES	no	no	0	0	0	0	0	0	5	5	5	5
OOF	no	no	YES	no	no	0	0	0	0	0	0	5	5	5	5
CRC	no	no	YES	no	no	0	0	0	0	9984	0	12	12	12	0
NOF	no	no	no	no	no	0	0	0	0	0	0	12	12	12	12

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```
Data retrieved from : ./TE/AUS14_120/dir17/C215

I.U.T.   PM4351 COMET     PMC-Sierra Inc
Test : 5.2.15  National Information Bits (SA4-8)
Test Sequence created on : 17/Aug/1999 13:47:51
TEST RESULT : PASSED
NFAS1=01011111
NFAS3=01011111
NFAS5=11011111
NFAS7=01011111
NFAS9=11011111
NFAS11=11011111
NFAS13=11011111
NFAS15=11011111
@
```

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Data retrieved from : ./TE/AUS14_120/dir2/C2161

I.U.T. PM4351 COMET PMC-Sierra Inc
Test : 5.2.16.1 Idle Time Slots
Test Sequence created on : 16/Aug/1999 12:33:54
TEST RESULT : PASSED

TimeSlot number	RECEIVED PATTERN	Number of bin. ONEs	PARTIAL VERDICT
1	11111111	8	pass
2	11111111	8	pass
3	11111111	8	pass
4	11111111	8	pass
5	11111111	8	pass
6	11111111	8	pass
7	11111111	8	pass
8	11111111	8	pass
9	11111111	8	pass
10	11111111	8	pass
11	11111111	8	pass
12	11111111	8	pass
13	11111111	8	pass
14	11111111	8	pass
15	11111111	8	pass
17	11111111	8	pass
18	11111111	8	pass
19	11111111	8	pass
20	11111111	8	pass
21	11111111	8	pass
22	11111111	8	pass
23	11111111	8	pass
24	11111111	8	pass
25	11111111	8	pass
26	11111111	8	pass
27	11111111	8	pass
28	11111111	8	pass
29	11111111	8	pass
30	11111111	8	pass
31	11111111	8	pass

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Data retrieved from : ./TE/AUS14_120/dir5/C2162

I.U.T. PM4351 COMET PMC-Sierra Inc
Test : 5.2.16.2 D-Channel Interframe Timefill
Test Sequence created on : 16/Aug/1999 14:14:29
TEST RESULT : PASSED

LOSS OF				ALARMS		
SIGNAL	FRAME	CRC MFRAME	PATTERN	AIS	REMOTE	ERROR
no	no	no	no	no	no	no

ERRORS COUNT					ERRORS FREE SECOND				
BIT	CODE	FRAME	CRC	E_bit	BIT	CODE	FRAME	CRC	E_bit
0	0	0	0	0	10	10	10	10	10

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```
Data retrieved from : ./TE/AUS14_120/dir1/C24

I.U.T.   PM4351 COMET     PMC-Sierra Inc
Test : 6.2.4  High Bit Error Ratio (CRC4)
Test Sequence created on : 16/Aug/1999 12:21:10
TEST RESULT : PASSED
Number of CRC-4 errors out of 1000 for (test period) seconds
step 1  623 (No Alarm)
step 2  902 (Only RAI Alarm)
step 3  623 (No alarms, except possible RAI)
step 4  623 (No alarms)
```

	ALARMS					ERRORS count					ERROR FREE SECONDS				
STEP num.	SIG	AIS	RAI	FML	CRC	BIT	CODE	FRAME	CRC	E_bit	BIT	CODE	FRAME	CRC	E_bit
1	no	no	no	no	no	0	0	0	0	9345	0	15	15	15	0
2	no	no	YES	no	no	0	0	0	0	13530	0	15	15	15	0
3	no	no	no	no	no	0	0	0	0	9345	0	15	15	15	0
4	no	no	no	no	no	0	0	0	0	9345	0	15	15	15	0

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